

CERTIFIED FOR PUBLICATION
COURT OF APPEAL, FOURTH APPELLATE DISTRICT
DIVISION ONE
STATE OF CALIFORNIA

ORANGE COUNTY WATER DISTRICT, Plaintiff and Appellant, v. ALCOA GLOBAL FASTENERS, INC. et al., Defendants and Respondents.	D070771 (Super. Ct. No. 04CC00715) ORDER MODIFYING OPINION AND DENYING REHEARING NO CHANGE IN JUDGMENT
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THE COURT:

The Orange County Water District's petition for modification is denied.

Northrop Grumman Systems Corporation's petition for rehearing is denied.

It is ordered that the opinion filed June 1, 2017, be modified to add the following as footnote 53 at the end of the first complete paragraph on page 150 (ending with "It has not done so."), which will necessitate renumbering of all the subsequent footnotes:

53 In a "petition for modification" filed after this opinion was issued, the District argues this court's conclusion that the trial court used an incorrect causation standard under the HSAA and the OCWD Act, which was prejudicial as to Northrop, requires reversal of the judgment on District's legal claims against Northrop as well. The District did not raise this argument in its briefing, so we will not consider it. (See *Conservatorship of Susan T.* (1994) 8 Cal.4th 1005, 1013.) Moreover, we

note the District's argument appears inconsistent with arguments it made in its briefs. As discussed above, in its briefing the District relied on alleged *differences* between the causation findings necessary to sustain claims under the HSAA and OCWD Act, on the one hand, and findings necessary to sustain the District's legal claims, on the other, to argue that the judgment as to its legal claims should be reversed. Additionally, the District has not explained in its petition why the trial court's *factual* findings in connection with the HSAA and the OCWD Act, which we have largely affirmed, could not still be applied to foreclose its legal claims.

It is further ordered that the opinion be modified to add the following as footnote 58 at the end of the first partial paragraph of page 159 (ending with "future costs and Northrop."):

58 In its modification petition (see fn. 53, *ante*), the District requests a change in the text of the disposition below to reflect that the trial court's award of costs in favor of Northrop is no longer valid. The District did not raise this issue in its briefs, and the cost award is the subject of a separate appeal pending in this court. (*Orange County Water Dist. v. Northrop Grumman Systems Corporation* (D070768, app. pending).) We will consider the validity of the cost award in that appeal.

There is no change in the judgment.

HALLER, Acting P. J.

Copies to: All parties

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COURT OF APPEAL, FOURTH APPELLATE DISTRICT

DIVISION ONE

STATE OF CALIFORNIA

ORANGE COUNTY WATER DISTRICT,

Plaintiff and Appellant,

v.

ALCOA GLOBAL FASTENERS, INC. et al.,

Defendants and Respondents.

D070771

(Super. Ct. No. 04CC00715)

APPEAL from a judgment of the Superior Court of Orange County, Kim G. Dunning, Judge. Affirmed in part; reversed in part and remanded with directions.

Connor, Fletcher & Hedenkamp, Edmond M. Connor, Douglas A. Hedenkamp; Miller & Axline, Duane C. Miller, Michael D. Axline and Justin Massey for Plaintiff and Appellant.

Lewis Brisbois Bisgaard & Smith, R. Gaylord Smith, Malissa McKeith, Ernest Slome, Thomas Teschner and Brittany H. Bartold for Defendant and Respondent Northrop Grumman Systems Corporation.

Tatro Tekosky Sadwick and René P. Tatro for Defendant and Respondent Alcoa Global Fasteners, Inc.

Bowman and Brooke and Lawrence Ramsey for Defendant and Respondent CBS Broadcasting, Inc.

Kutak Rock, Jad T. Davis and Tiffany K. Ackley for Defendant and Respondent Crucible Materials Corp.

Musick Peeler & Garrett and Steven J. Elie for Defendant and Respondent The Arnold Engineering Company.

The Orange County Water District (the District) brought this action to recover costs associated with the North Basin Groundwater Protection Project (NBGPP), a proposed \$200 million effort intended to address groundwater contamination in northern Orange County, California caused by volatile organic compounds (VOC's) and other chemicals. Since at least the mid-1980's, the District and other regulatory agencies such as the Regional Water Quality Control Board (RWQCB) have been aware of VOC groundwater contamination in the North Basin area. The District and various private parties under the direction of the RWQCB investigated the sources of contamination. Based on these investigations, the District and others concluded that the groundwater contamination was caused by VOC releases at a number of industrial sites in the North Basin area. Under the supervision of the RWQCB and other regulatory agencies, several of these industrial sites have undergone remediation to remove VOC contamination from the shallow soil and groundwater. Other industrial sites received "no further action" letters from the RWQCB based on their investigations.

Concerned that VOC contamination remained in groundwater notwithstanding these remediation efforts, the District began to develop an overarching solution to groundwater contamination in the North Basin. Beginning in 1999, the District developed and then refined a series of proposals for the NBGPP. The NBGPP is intended to treat VOC contamination in the shallow aquifer, with the goal of preventing contamination of the deeper principal aquifer. The principal aquifer is a source of drinking water for several Orange County municipalities.

An aquifer, at its most basic level, consists of soil or permeable rock saturated with water. In the North Basin area, the shallow aquifer begins approximately 130 feet below ground level and extends to approximately 250 feet ground level. Below the shallow aquifer, separated by a relatively less permeable layer of soil, is the principal aquifer. The principal aquifer begins just below the shallow aquifer and extends to approximately 1,200 to 1,500 feet below ground level in the North Basin area. When used without qualification in this appeal, the term "groundwater" typically refers to water in the shallow aquifer but sometimes the principal aquifer as well.¹

In the course of its investigation, the District identified various current and former owners and operators of industrial sites in the North Basin area that it believed were

¹ Large portions of the record are unclear in this regard. Where the record permits, we have endeavored to use as precise a term as possible. The term "groundwater" can also refer to so-called "perched" groundwater, which is created when clay layers or other less permeable soils prevent water from migrating downwards toward the shallow and principal aquifers, forcing it to collect or "perch" atop the less permeable soil. However, in this appeal, the usual use of the unqualified term "groundwater" excludes perched groundwater.

responsible in some way for VOC contamination. The primary VOC's identified included tetrachloroethylene (also known as perchloroethylene or PCE), trichloroethylene (TCE), 1,1-dichloroethylene (1,1-DCE), and 1,1,1-trichloroethane (1,1,1-TCA). The last chemical, 1,1,1-TCA, breaks down into 1,1-DCE and acetic acid. The detection of 1,1-DCE in soil or groundwater can be evidence of past 1,1,1-TCA contamination.

The District filed suit against a number of these owners and operators, including defendants at issue in this appeal: Alcoa Global Fasteners, Inc. (Alcoa), Arnold Engineering Co. (Arnold), CBS Broadcasting, Inc. (CBS), Crucible Materials Corp. (Crucible), and Northrop Grumman Systems Corp. (Northrop). The District sued several other parties, who settled or were otherwise dismissed from the litigation prior to this appeal. In some cases, as we will explain, the District sued parties who had remediated or were remediating their sites under the auspices of the RWQCB, on the theory that such remediation did not affect VOC contamination that had migrated to the shallow aquifer in the past. The District obtained approximately \$21 million in settlements during the underlying litigation.

The District asserted statutory claims for damages under the Carpenter-Presley-Tanner Hazardous Substances Account Act (HSAA; Health & Saf. Code, § 25300 et seq.) and the Orange County Water District Act (OCWD Act; West's Ann. Wat. Code App. (2016 ed.) ch. 40) and for declaratory relief (Code Civ. Proc., § 1060). The District also asserted common law claims for negligence, nuisance, and trespass.

By the time of trial, the design of the NBGPP had not been finalized and the vast bulk of the project had not been constructed. The District claimed it had spent

approximately \$3.7 million in development and construction costs, out of the estimated \$200 million total. The District sought to recover its past costs and obtain a declaration holding defendants liable for future costs associated with the NBGPP.

Following an initial bench trial on the District's statutory claims, the trial court determined that the District should take nothing. The court found, among other things, that the NBGPP was neither a reasonable nor a necessary response to the identified groundwater contamination and that defendants did not cause the District to undertake the NBGPP. The court concluded that defendants were entitled to a declaration that they were not responsible for past or future costs related to the NBGPP.

In light of the court's findings, defendants argued that a trial on the District's remaining common law claims for negligence, nuisance, and trespass was unnecessary because those findings would apply in any jury trial on the remaining claims. The court agreed and entered judgment in favor of defendants.

The District appeals. It challenges the judgment on numerous grounds, including (1) the trial court misinterpreted the legal requirements of the District's claims under the HSAA and the OCWD Act; (2) the court erred under Code of Civil Procedure, section 1048, subdivision (b) by scheduling a bench trial on the District's statutory (equitable) claims before a jury trial on the District's common law (legal) claims, thereby depriving the District of its right to trial by jury; (3) the court erred by applying its factual findings on the District's equitable claims to defeat the District's common law claims; (4) the court misapplied Evidence Code section 412 and made other erroneous evidentiary rulings; and (5) the court erred by granting declaratory relief in favor of defendants. In response,

among other arguments, defendants contend the District cannot assert a claim under the HSAA because it is not seeking "contribution" or "indemnity" as those terms are used in the statute.

We conclude the District may assert a claim under the HSAA. On the merits, however, as we shall explain, we find the trial court misinterpreted some elements of this claim, including its causation standard. Based on our review of the evidence and the court's factual findings, we conclude the court's causation error did not prejudice the District, except as to Northrop. However, because the District's HSAA has other essential elements, one of which was not satisfied as to any defendant, the District's HSAA claim against all defendants including Northrop fails. Even though the latter issue is dispositive of the District's HSAA claim, we address the former issues because they present important and novel legal questions and because they affect our consideration of the District's declaratory relief claim.

We further conclude the trial court misinterpreted elements of the District's claim under the OCWD Act, which are similar but not identical to the elements of an HSAA claim. We conclude these errors prejudiced the District as to Northrop (but not the other defendants). We will therefore reverse the judgment on the District's OCWD Act claim as to Northrop and otherwise affirm.

Based on these conclusions, we will reverse the court's declaration of no liability in favor of Northrop but affirm court's declaration of no liability in favor of the remaining defendants. We find no merit in the District's assignments of error concerning trial sequencing and its common law claims, and although the court misapplied Evidence

Code section 412, it was not prejudicial. The remainder of the judgment will therefore be affirmed as well.

FACTUAL AND PROCEDURAL BACKGROUND

The District and Its Allegations

The District is a public entity established by the California Legislature and empowered to manage, replenish, regulate, and protect groundwater supplies within its boundaries. (OCWD Act, §§ 1, 2.) The District has the power to "[t]ransport, reclaim, purify, treat, inject, extract, or otherwise manage and control water for the beneficial use of persons or property within the district and protect the quality of groundwater supplies within the district." (*Id.*, § 2, subd. (6)(j).) In furtherance of these goals, the District may "commence, maintain, intervene in, defend, and compromise . . . any and all actions and proceedings . . . to prevent . . . diminution of the quantity or pollution or contamination of the water supply of the district . . ." (*Id.*, § 2, subd. (9).)

In 2004, the District filed this lawsuit against a number of defendants, including defendants at issue in this appeal, to address current and threatened groundwater contamination in the North Basin. In its operative first amended complaint (FAC), the District alleged each defendant owned or operated one or more industrial sites in northern Orange County where hazardous wastes (i.e., VOC's) had been released into the environment. The release of hazardous wastes had caused or threatened to cause contamination in groundwater within the District's geographic area. The District alleged injury in the form of investigation and remediation costs to address this contamination and threatened contamination, as well as the ongoing threat to public health, natural

resources, and the environment posted by the hazardous waste releases. To recover its costs and address this threat, the District alleged causes of action against all defendants under the OCWD Act and the HSAA and under common law theories of negligence, nuisance, and trespass. The District also alleged a cause of action for declaratory relief, which claimed "[a]n actual controversy exists concerning who is responsible for abating actual or threatened pollution or contamination of groundwater resources within the District by VOC's" and sought "adjudication of the respective rights and obligations of the parties." The District sought compensatory and punitive damages, attorney fees, costs, an order finding defendants liable for the full cost of remediation, an order declaring the contamination a nuisance and compelling defendants to abate it, and any other proper relief. Defendants cross-complained against the District for, among other things, a declaration of no liability.

Pretrial and Trial Proceedings

During a status conference, the court announced its intention to bifurcate trial on the District's claims, with an initial bench trial on the District's equitable claims (under the OCWD Act and the HSAA and for declaratory relief) and a subsequent jury trial on the District's legal claims (for negligence, nuisance, and trespass). The District urged the court to try its legal claims first in front of a jury. It expressed concern that holding a bench trial first would impair its right to a jury trial on its legal claims. The court acknowledged the District's right to a jury trial but confirmed its inclination to hold a bench trial first. Later, the court granted several defendants' motions for summary adjudication of the District's negligence claim on statute of limitations grounds.

The bench trial on the District's equitable claims began in February 2012 and lasted over seven months. The District and defendants presented extensive lay and expert testimony, as well as documentary evidence, covering the history of the NBGPP, the District's investigation and analysis of the North Basin area, activities at defendants' industrial sites that may have led to hazardous waste disposal and releases, activities at other sites in the North Basin area that may have led to hazardous waste releases, previous soil and groundwater remediation efforts by defendants and others, the involvement of regulatory agencies other than the District in such remediation efforts, the potential impact of hazardous waste releases on groundwater in the North Basin area, and the NBGPP's effect on such groundwater.²

History of the NBGPP

The evidence at trial showed that the District became aware of groundwater contamination in the North Basin area in the mid-1980's. Data from monitoring wells and other sources identified a plume of VOC contamination in groundwater, oriented east to west, approximately 4.5 miles long and up to one mile wide. This contamination primarily affected groundwater in the shallow aquifer. But by the late 1990's, VOC contamination had reached the principal aquifer in certain areas, leading to the decommissioning of several drinking water wells.

² One defendant at trial, MAG Aerospace Industries, Inc. (MAG), successfully moved for judgment on the District's equitable claims under Code of Civil Procedure section 631.8 and thereafter obtained judgment on the District's remaining legal claims as well. We consider the judgment involving MAG in a separate opinion filed this date. (*Orange County Water District v. MAG Aerospace Industries, Inc.* (June 1, 2017, D070562) ___ Cal.App.5th ___.)

In 1999, the District issued a request for proposal for a focused feasibility study to assess various options concerning groundwater contamination in the North Basin area. The District's request for proposal stated that the "presumed remedy" for groundwater contamination was hydraulic containment of the VOC plume, i.e., the construction of wells to extract contaminated groundwater from the shallow aquifer, remove VOC contaminants, and discharge the treated water back into the environment. This remedy was intended to minimize the further spread of contaminants in groundwater. It would later be known as the NBGPP.

The next year, a consultant to the District prepared a draft focused feasibility study. The study analyzed the extent of VOC groundwater contamination in the North Basin area and evaluated the effects of four potential alternative responses. These responses were the following: (1) No Action: "In this alternative, it is assumed that no remedial measures of any type would be implemented by [the District] or any other party and that ongoing remedial efforts by private parties would be terminated." (2) Monitored Natural Attenuation: "In this alternative, it is assumed that no remedial measures would be implemented by [the District], although ongoing and/or planned remedial measures by other parties would continue. Also, [the District] and others would continue to monitor water quality via existing and recommended new wells." (3) Mitigation Control at Leading Edge: "This alternative contains all of the elements of [Monitored Natural Attenuation] but also includes the extraction of 600 gpm of VOC-containing ground water from each of three wells (for a total of 1,800 gpm) located at or

near the 'leading edge' of the VOC plume."³ (4) Migration Control at Leading Edge with Enhanced Removal: "This alternative contains the same elements as [Migration Control at Leading Edge] but includes three additional extraction wells located within the VOC plume." The two treatment responses, the third and the fourth alternatives, relied on a "modular" system, i.e., individual extraction wells with onsite treatment facilities. The treated water would then be returned to the principal aquifer through injection wells or discharged onto surface spreading grounds to naturally recharge the shallow aquifer. The primary contaminants targeted for remediation were PCE, TCE, 1,1-DCE, and *cis*-1,2-dichloroethylene.

The draft focused feasibility study was intended to be consistent with standards established by the United States Environmental Protection Agency for environmental remediation programs. These standards, entitled the "National Oil and Hazardous Substances Pollution Contingency Plan" (NCP), are codified in federal regulations. (40 C.F.R. § 300.1 et seq.) Under the NCP, the primary objective of a feasibility study is "to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected." (40 C.F.R. § 300.430(e)(1).)

The draft focused feasibility study prepared for the District discussed in detail the four alternatives and assessed them across nine criteria: overall protection of human health and the environment; compliance with ARAR's; long-term effectiveness and

³ The abbreviation "gpm" refers to gallons per minute, a measure of the capacity of the extraction wells to pump groundwater.

permanence; reduction of mobility, toxicity, and volume through treatment; short-term effectiveness; implementability; cost, state acceptance; and community acceptance. (See 40 C.F.R. § 300.430(e)(9)(iii).) The 30-year net present value cost ranges for each alternative (including capital, operation, and maintenance costs) were no cost for the No Action alternative, approximately \$3.5 million for the Monitored Natural Attenuation alternative, approximately \$11 million to \$18 million for the Mitigation Control at Leading Edge alternative, and approximately \$13 million to \$23 million for the Mitigation Control at Leading Edge with Enhanced Removal alternative.

Five years after the draft focused feasibility study was prepared, a different consultant for the District prepared a supplemental focused feasibility study. This supplemental study, issued in January 2005, assessed two variations of the Mitigation Control at Leading Edge alternative discussed in the draft focused feasibility study. The supplemental study explained that two changed circumstances required redesign of that alternative: (1) monitoring data noted the presence of additional contaminants that should be remediated, including 1,1-dichloroethane and 1,4-dioxane; and (2) property acquisition for the placement of modular extraction wells and treatment systems had proven difficult. The alternatives under consideration in the supplemental focused feasibility study involved extraction wells placed along the leading edge of the plume, similar to the draft study, but the water would be pumped to a centralized treatment system. In the first alternative, the District would construct and operate a single centralized treatment system. In the second, the District would construct and operate two centralized treatment systems. In both alternatives, the District would release treated

water into the shallow aquifer through discharge into flood basins adjacent to the treatment systems.

The supplemental focused feasibility study did not consider nontreatment alternatives, such as the No Action and Monitored Natural Attenuation alternatives identified in the draft study. The supplemental study explained that it "focuses primarily on treatment technologies in the context of the presumptive remedy (i.e., hydraulic control)." The supplemental feasibility study also limited its assessment to two of the nine previously-considered criteria: implementability and cost. The supplemental study estimated the 30-year net present value costs for both alternatives at approximately \$19 million.

The District circulated a notice of intent to adopt a mitigated negative declaration for the NBGPP under the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et seq.). It made available for inspection the draft mitigated negative declaration and supporting initial study. Following an approximately one-month public review period, the District reported that it did not receive any comments that supported the need for an Environmental Impact Report (EIR) or any significant modification to the project. The District's board of directors adopted the mitigated negative declaration for the project.⁴

⁴ As a public agency, the District's board and committee meetings are open to the public. The District provides notice of agenda items and, at least 72 hours prior to the meeting, technical backup information. The District accepts written public comments on agenda items and holds a public comment period during meetings.

Later in 2005, District staff prepared a report assessing the hydrogeological and engineering aspects of the NBGPP. The report discussed additional modifications to the project following the supplemental focused feasibility study. The RWQCB had notified the District that additional studies were needed to determine whether the project would exacerbate perchlorate contamination in the shallow and principal aquifers. Because of the expense of such studies, and the likelihood that perchlorate contamination would in fact be exacerbated, the District determined that perchlorate treatment should be part of the project. Similarly, the District identified nitrate contamination in groundwater and determined that nitrate treatment should be part of the project as well. For these reasons, among others, the District settled on a single centralized treatment system that would treat extracted groundwater for the previously-identified VOC's as well as perchlorate and nitrate. The report estimated the capital costs of the project, including contingencies, to be approximately \$20 million with estimated annual operation and maintenance costs of \$1.85 million. The report calculated that the project would treat 5,650 acre-feet of groundwater per year, leading to a total treatment cost (including amortized capital costs and operation and maintenance costs) of \$576 per acre-foot of water.⁵ The District's board of directors approved the NBGPP as described in the staff report.

In light of the changes to the NBGPP project, the District commissioned a Draft Subsequent Environmental Impact Report (Draft SEIR). The Draft SEIR reviewed the environmental impacts associated with the changes in the project after the mitigated

⁵ An acre-foot is a unit of measurement equal to the volume of water required to cover an area of one acre with one foot of water.

negative declaration was approved. The changes identified in the Draft SEIR included, among other things, a new proposed extraction well, additions to the centralized treatment system to accommodate the remediation of additional contaminants (e.g., perchlorate and nitrate), and a new recharge system involving injection wells. The Draft SEIR included discussions of four alternatives, but each alternative involved constructing at least the version of the NBGPP described in the 2005 supplemental focused feasibility study and mitigated negative declaration.

Prior to preparing the Draft SEIR, the District circulated notices to public agencies and interested parties. It received eight comment letters from various public agencies and Northrop. The District also met with the South Coast Air Quality Management District and Northrop to discuss the changes to the project. The District circulated the Draft SEIR to the public and received a number of comments.

By the time of trial, the District had constructed five extraction wells. But plans for the centralized treatment system were not complete, and no treatment had yet occurred. The District estimated that it had spent approximately \$3.7 million on the project to date. The District's cost estimate for the entire project, however, had increased to over \$200 million.

The NBGPP's Environmental Effects

The effect of the proposed NBGPP project on the VOC plume, and on the shallow and principal aquifers more generally, was hotly contested at trial. The objectives of the project, as summarized in the District's 2005 staff report, were to (1) "[p]revent exposure of the public to groundwater containing contaminants exceeding drinking water

standards," (2) "[i]nhibit the lateral and vertical migration of contamination to protect the aquifer and existing [drinking water] production wells from further impacts," and (3) "[r]emove contaminant mass from the aquifer."

It was undisputed at trial that VOC contaminants in the North Basin area would naturally degrade to some extent over time, even setting aside the effects of the NBGPP, based on natural chemical processes. This process is called natural attenuation. It was also undisputed that other public agencies and private parties had undertaken efforts to remediate VOC-contaminated sites in the North Basin area. For example, the District recognized in its 2000 draft focused feasibility study that at least 15 private parties had been required by the RWQCB to investigate subsurface contaminants at their sites, and at least seven sites had been actively remediated. At least two other sites were remediated by or at the direction of the California Department of Toxic Substances Control (DTSC). This process, called source removal, would likely lead to a decrease in the downward migration of VOC contaminants into groundwater, including the shallow aquifer, and foster the reduction of contaminant levels through natural attenuation.

At trial, District expert Graham Fogg opined, based on computer models of the North Basin area, that the NBGPP would remove approximately half of the VOC contaminant mass in the shallow aquifer over 30 years of operation. Fogg was impeached, however, by deposition testimony in which he admitted that removing a third

of the VOC contaminant mass would be an "optimistic" estimate. Fogg did not model the effect of the NBGPP on existing drinking water production well fields.⁶

A defense expert, Steven Larson, agreed that the NBGPP would change conditions in some areas of the shallow aquifer. Larson, however, also specifically modeled the effect of the NBGPP on the principal aquifer. He found no material change in the level of contaminants there, especially in the areas surrounding existing drinking water production wells. Larson concluded that the NBGPP would provide no benefit to the principal aquifer. Based on the data Larson reviewed, which was confirmed in a District report, contaminant levels in the principal aquifer were already relatively stable or declining. Larson expected that trend to continue regardless of whether the NBGPP was constructed. Larson concluded that the cost of the NGBPP was not justified in light of the similarity between the conditions in the principal aquifer, especially around drinking water production wells, if the NGBPP were constructed and if it were not. He believed the NGBPP was neither reasonable nor necessary to reduce VOC contamination in the principal aquifer to an acceptable level.⁷

⁶ The evidence at trial showed that the drinking water production wells that had been removed from service because of VOC contamination in the principal aquifer were located in an area of the North Basin that would not be affected by the NBGPP. The District determined that active treatment of the VOC contamination plume in that area was unnecessary. It believed monitored natural attenuation would be sufficient to protect human health and the environment there.

⁷ Larson also believed that one proposed extraction well was unnecessary, even accepting other elements of the NBGPP on their own terms, because of its proximity to other treatment wells (whose pumping rates could be increased to compensate for the removal of that well).

Larson criticized the District for not examining the effect of treatment (or lack thereof) on the level of contaminants in the principal aquifer during development of the NGBPP. In Larson's view, this failure was exacerbated when the plan for treated water under the NGBPP changed from injection directly into the principal aquifer to discharge into the shallow aquifer. While injecting treated water into the principal aquifer would tend to inhibit migration of contaminants downward from the shallow aquifer, releasing treated water into the shallow aquifer would likely have the reverse effect: Contaminants in the shallow aquifer would be pushed downward into the principal aquifer.

Defendants' Sites

The testimony and evidence at trial also focused on the industrial activities, environmental conditions, and past remediation efforts at defendants' sites in the North Basin area. Richard Waddell, a District expert witness, testified that VOC's had been released into the environment at each site. He concluded that these releases had caused contamination of groundwater, including the shallow aquifer.

Each defendant, through expert and percipient testimony, disputed Waddell's conclusions. Aside from Northrop, defendants' primary arguments were (1) VOC's had not been released at their sites, (2) they were not responsible for any VOC releases that had occurred, or (3) any releases at their sites had not caused VOC contamination in groundwater. Northrop acknowledged that its sites had potentially contributed to groundwater contamination in the past. It argued, however, that its remediation activities at those sites had removed any potential source of future contamination. The evidence regarding each defendant's site or sites will be discussed in turn below.

Alcoa

Alcoa leased the site at 800 South State College Boulevard in Fullerton, California from 2002 through 2007, and it has owned the site since then. For decades prior to Alcoa's tenancy, industrial activities at the site included the use of a large vapor degreaser. The solvents used in this degreaser included TCE and PCE. Alcoa continued to use the degreaser in 2002 and 2003 after it occupied the site. Soil samples taken near the location of the degreaser revealed high concentrations of PCE at shallow depths and high concentrations of TCE at slightly greater depths. In consultation with the RWQCB, Alcoa constructed a soil vapor extraction system to remediate the soil at the site to a depth of 50 feet. The system removed approximately 10,500 pounds of VOC's from the soil.

In Waddell's view, the soil samples showed that releases of PCE and TCE had occurred at the Alcoa site in the area of the former degreaser. Because PCE and TCE were also detected in groundwater beneath the site, and based on the site characteristics and historical sampling data, Waddell believed that releases at the Alcoa site had contributed to PCE and TCE contamination of groundwater. On cross-examination, however, Waddell limited his testimony to the opinion that such contamination was *possible*, i.e., there was a physical mechanism by which contamination could have occurred. His opinion was not that VOC releases at the Alcoa site had *actually* made their way to groundwater. Waddell acknowledged that a nearby upgradient site operated by Aerojet, a nonparty, contributed to groundwater PCE contamination as well. Because the Aerojet site was such a large contributor to PCE contamination, Waddell admitted

that the impact of the Alcoa site on PCE levels in groundwater would be too small to be discernable.

Alcoa's expert witness, Richard Weiss, reviewed the available data and determined there was no evidence that VOC releases at the Alcoa site reached groundwater. He testified that sampling data revealed an approximately 30-foot gap between the deepest soil VOC detection and groundwater below the Alcoa site. Weiss explained that if VOC's had migrated to groundwater, they would have been detected in the soil in a reasonably continuous manner. As a further basis for his opinion, Weiss cited the composition of the soil under the Alcoa site, which impeded downward migration of VOC's, and the chemical signature of the VOC's detected in groundwater, which differed from the chemical signature of the VOC's released at the Alcoa site. Instead, the chemical signature of VOC's in groundwater matched the chemical signature of VOC's released from the Aerojet site.

Arnold

Arnold owned and operated the site at 1551 East Orangethorpe Avenue in Fullerton from 1960 through 1984. During that time, Arnold operated one or more vapor degreasers, clarifiers, and dip tanks (or "strippers") at the site. The identity of the VOC's used in the degreasers and dip tanks was the subject of conflicting testimony at trial. (Clarifiers do not themselves make use of VOC solvents, but they can be a source of VOC discharge into the environment because they may process VOC-contaminated wastewater generated by other activities.)

A former Arnold maintenance manager testified that he was aware of only one chemical, 1,1,1-TCA, used in one Arnold degreaser. Another former Arnold employee, Daniel Hopen, testified to seeing barrels of chemicals with labels showing both "trichloroethylene" (TCE) and "1,1,1" used in degreasers. On cross-examination, Hopen appeared to waver, stating confidently only that the barrels were labeled "1,1,1." (The only relevant chemical in this litigation with the designation "1,1,1" is 1,1,1-TCA.) Hopen also recalled other barrels labeled "perchloroethylene" (PCE) used in Arnold's dip tanks. Permits issued from 1970 through 1984 identified only 1,1,1-TCA as the solvent used in degreasers and stored in a storage tank at the Arnold site. Other permits did not identify a specific solvent. Use of TCE was restricted after 1976. In Waddell's opinion, based on research into Arnold's activities at the site as well as those of subsequent occupants, Arnold used 1,1,1-TCA, TCE, and PCE.

Soil samples taken in 1995, approximately a decade after Arnold left the site, revealed VOC contamination in the shallow soil. For example, high concentrations of PCE were found in depths up to 30 feet near a clarifier on the southern side of the Arnold site. Waddell testified that these sampling results indicated a PCE release had occurred at the site. Waddell also reviewed evidence of Arnold's activities at the site (including employee testimony, photographs, and brochures) and concluded that the Arnold's handling of VOC solvents was likely to cause releases of those VOC's into the environment.

The property owner at the time attempted to remediate the VOC contamination and operated a soil vapor extraction system for several months. Additional sampling

after this remediation revealed VOC contamination extending to greater depths, including 60 feet for PCE and 95 feet for TCE. In Waddell's view, these results showed that the remediation was not successful.

Further sampling of the shallow soil (down to 40 feet below the surface) took place in 2007. The sampling revealed PCE, TCE, 1,1,1-TCA, and 1,1-DCE contamination in multiple locations at the Arnold site. (As noted above, 1,1-DCE is a degradation product of 1,1,1-TCA.) The next year, the property owner began remediation with a soil vapor extraction system again. By the time of trial, the system had extracted 90 pounds of VOC's, the vast majority of which was PCE. A small amount of TCE was also extracted. The system remained in operation.

The groundwater directly under the Arnold site was not tested for VOC contaminants. Monitoring wells at an adjacent property, the nonparty Johnson Controls site, revealed VOC contamination in groundwater. Waddell believed that this contamination was the result of VOC releases at the Arnold site rather than the Johnson Controls site. In 2010, the District retrieved grab samples from the shallow aquifer both upgradient and downgradient of the Arnold site. Concentrations of TCE were higher in grab samples downgradient of the Arnold site. Based on this and other data, Waddell concluded that the Arnold site contributed TCE and 1,1-DCE to contamination in groundwater. Concentrations of PCE were relatively stable, and Waddell was limited at

trial to the opinion that the Arnold site did not contribute to PCE contamination in groundwater.⁸

Arnold's expert witness, Jonathan Rohrer, reviewed the evidence and concluded that Arnold had used only 1,1,1-TCA in its operations. Rohrer further concluded that Arnold's operations at the site had not caused any discharge of VOC's into soil or groundwater. Rohrer based his conclusion on the Arnold's use of 1,1,1-TCA only, the soil and groundwater data surrounding the site, the lack of documented chemical releases into soil during Arnold's operations, and the presence of several VOC-contaminated properties upgradient of the Arnold site. He identified subsequent occupants of the Arnold site as possible contributors to VOC contamination based on their activities and the recovery of numerous barrels of hazardous waste from the site. Rohrer admitted that VOC contamination in the shallow soil at the Arnold site indicated that PCE and TCE had been released there by someone, but he did not agree Arnold was responsible.

Rohrer criticized Waddell's reliance on grab samples and disagreed that the data showed the Arnold site contributed TCE to groundwater. Rohrer testified that the locations of the grab samples were inadequate to distinguish the contribution of the Arnold site to VOC contamination from the contributions of the upgradient sites. Waddell, for his part, agreed that sampling at the site was inadequate to fully characterize the VOC contamination there.

⁸ Waddell acknowledged that another upgradient property, the nonparty Jonathan Manufacturing site, contributed to TCE and PCE contamination in groundwater.

Separately, Rohrer modeled the potential contribution of contaminants from the Arnold site. This model was based on the District's interpretation of the grab samples and its estimates of the amounts of contaminants that would be remediated by its extraction wells. Rohrer cautioned that his model was based on the assumption that the upgradient and downgradient differentials in the District's grab samples were attributable to the Arnold site, an assumption Rohrer had criticized as unfounded. Rohrer concluded, based on his model, that the Arnold site contributed approximately 4.95 grams of VOC contamination (PCE, TCE, and 1,1-DCE) to the daily amount that would be remediated by the NBGPP.

CBS

CBS owned and operated the site at 500 South Raymond Avenue in Fullerton from 1965 to 1983. The site housed the Fender Electric Instrument Company, which CBS purchased in 1965. A CBS subsidiary purchased the adjacent site at 1300 East Valencia in 1965, and CBS expanded its holdings at that address the next year. CBS sold the property in 1986.⁹ A portion of the 1300 East Valencia site, used by CBS partially as a parking lot, has since been subdivided and now bears the address 700 Sally Place.

CBS's operations at 500 South Raymond included the use of a degreaser and an above-ground storage tank for VOC solvent. The solvent CBS used was PCE. Samples collected from the shallow soil near the degreaser and the storage tank revealed VOC

⁹ MAG leased the site at 1300 East Valencia from 1989 through 2002. As noted, we consider the judgment involving MAG in a separate opinion filed this date. (*Orange County Water District v. MAG Aerospace Industries, Inc.*, *supra*, ___ Cal.App.5th ___.)

contamination. Additional samples, taken up to a depth of 100 feet below the surface, showed PCE contamination down to 70 feet. PCE was also detected in groundwater beneath the site.

At 1300 East Valencia, CBS operated a dip tank using solvents. Although a former CBS employee denied that CBS used PCE at the site, shallow soil and groundwater samples revealed PCE contamination. Waddell admitted that some contamination was the result of an adjacent site (nonparty American Electronics), but he believed that monitoring well data showed that the 1300 East Valencia site contributed PCE to groundwater as well. Waddell observed that concentrations of TCE had decreased over time while PCE concentrations had increased. In his view, if the American Electronics site were the only site contributing PCE and TCE to groundwater, changes in their concentrations should mirror each other.¹⁰

At the site now known as 700 Sally Place, soil samples revealed PCE contamination near a former storage area. Again, however, a former CBS employee denied that CBS used PCE there, and Waddell admitted that there was no evidence CBS used or stored PCE at that site.

¹⁰ Other contaminants, such as TCE, were detected at the 500 South Raymond and 1300 East Valencia sites. Waddell believed that these contaminants had migrated there from an adjacent sites. For 500 South Raymond, the site Waddell identified was the nonparty Chicago Musical site, which was heavily contaminated with PCE, TCE, 1,1,1-TCA, and 1,1-DCE and was being remediated by the DTSC. Over a several-month test period, almost 17,000 pounds of VOC's were removed through a soil vapor extraction system at the Chicago Musical site. For 1300 South Valencia, Waddell identified the nonparty Monitor Plating and American Electronics sites. Waddell testified that TCE detections at 1300 South Valencia were the result of migration from the Monitor Plating site. The American Electronics site, in Waddell's view, contributed both TCE and PCE.

Based on the site data and his analyses, Waddell opined that CBS had released PCE into the environment at the 500 South Raymond and 1300 East Valencia sites. He concluded that those releases had likely resulted in contamination of groundwater at the sites.

CBS's expert witness, Daniel Stephens, disagreed. He concluded that contamination at the sites associated with CBS had not impacted groundwater. Stephens based his conclusion on historical data as well as his own investigation of the sites in 2011. Stephens agreed the shallow soil around the degreaser and storage tank at the 500 South Raymond site was contaminated with PCE. But Stephens believed that deeper soils were impacted by contamination at another site, most likely Chicago Musical. He relied primarily on a gap in the detections of PCE between the shallow soil and groundwater and differences in the chemistry (i.e., the VOC profile) of the shallow soil when compared to groundwater. Stephens criticized Waddell for misstating and minimizing the concentrations of VOC's found at the Chicago Musical site.

Regarding the 1300 East Valencia site, Stephens pointed out that the shallow soil was extensively sampled in 1988, but only one sample detected PCE, near the former dip tank at the edge of the property. Later, more extensive testing revealed PCE contamination to a depth of around 70 feet below the surface at that location. But no contamination was found for approximately 40 feet below that level, until the testing hit groundwater. Based on this fact, and his own interpretation of monitoring well data, Stephens concluded there was no nexus between the PCE contamination found in the shallow soil at the 1300 East Valencia site and contamination in groundwater.

Stephens's conclusion was supported by two prior investigations of the 1300 East Valencia site. In a 2003 letter, the RWQCB reviewed the existing data regarding the site and recommended that no further action be taken: "Based on the low concentrations and small amount of mass of VOC's that are present in the soil and groundwater, the limited volume of groundwater that is impacted at this site, the limited lateral and vertical extent of VOC's in groundwater, and the existence of an off-site source, this site does not appear to pose a current, significant threat to the beneficial uses of groundwater."¹¹ Similarly, a 2002 report commissioned by the then-owner of the 1300 East Valencia site concluded, based on the limited extent of shallow soil PCE contamination in the area of the former dip tank, that "the data collected during this investigation indicates that groundwater has not likely been impacted by this past release."

For 700 Sally Place, as with CBS's other sites, Stephens opined that any VOC contamination there did not impact groundwater. Stephens based his opinion on soil samples (which showed a gap in PCE detections before reaching groundwater), the differing chemical profiles of the contamination in shallow soil and in groundwater, and the presence of upgradient sources of contamination. In 1995, the RWQCB issued a no further action letter for the 700 Sally Place site. The RWQCB confirmed the gap in PCE detections, but it determined that PCE contamination at the site had impacted

¹¹ The RWQCB found, as a preliminary matter, that "[i]t is apparent that VOC's from this site have impacted groundwater." The letter does not specify whether this impact came from VOC's released at the surface or subsurface VOC migration from off-site sources. Stephens interpreted the letter as concluding that there was no "definite impact to groundwater" from the PCE contamination in the area of the former dip tank.

groundwater: "It appears that volatile organic compounds are not present in the soil at concentrations that would require remediation or that would pose a significant threat to groundwater quality. However, the presence of PCE in a groundwater sample from the low spot area indicates that PCE from the site has impacted groundwater quality."¹² Stephens analyzed the historical uses of 700 Sally Place by CBS and determined that the "low spot" identified by the RWQCB was created after CBS sold the property. Stephens therefore opined that any such contamination was caused by subsequent occupants.

Crucible

Crucible owned and operated the site at 2100 East Orangethorpe Avenue in Fullerton from the late 1950's until 1985. Crucible admitted using the solvents TCE and 1,1,1-TCA in an immersion degreaser at the site. The solvents were stored at a separate location on the site. Shallow soil sampling conducted in 1984 showed the presence of PCE, TCE, 1,1,1-TCA, and 1,1-DCE. The next year, a limited amount of soil was excavated in an effort to partially remediate a portion of the site. Additional sampling occurred in 2002 and 2003, specifically in the areas surrounding the degreaser and chemical storage area. The sampling revealed contamination with PCE, TCE, 1,1,1-TCA, and 1,1-DCE in both areas. No contamination was found at 40 feet below the surface, however, and the sampling did not proceed to depths below that level.

¹² The PCE groundwater contamination identified by the RWQCB was relatively minor. It was below the applicable maximum contaminant level for PCE in drinking water.

Based on this data, Waddell concluded that Crucible had released not only TCE and 1,1,1-TCA, but also PCE, into the soil at the degreaser and the chemical storage area. (As noted above, 1,1-DCE is a degradation product of 1,1,1-TCA.) Although the chemical storage area was adjacent to a site occupied by nonparty Vista Paint, which was also contaminated, Waddell determined that the soil contamination came from the Crucible site based on its chemical profile.¹³

A groundwater monitoring well on the site of nonparty AC Products, located approximately 1,000 feet from the Crucible site, detected VOC contamination in groundwater. The District conducted further sampling at locations surrounding the Crucible site. The sampling detected PCE, TCE, 1,1,1-TCA, and 1,1-DCE in perched groundwater, 60 to 70 feet below the surface, and PCE, TCE, and 1,1-DCE in the shallow aquifer as well, 100 to 120 feet below the surface. Waddell observed that the chemical profile of the VOC's found in soil sampling at the site was similar to the chemical profiles of the perched groundwater and (aside from 1,1,1-TCA, which had degraded into 1,1-DCE) the shallow aquifer. Based on this data, as well as data from the AC Products monitoring well, Waddell opined that VOC releases at the Crucible site had caused contamination of both the perched groundwater and the shallow aquifer. Waddell further opined that soil contamination at the Crucible site was a continuing source of groundwater contamination.

¹³ Waddell's opinions involving Vista Paint were undermined by his admissions, on cross-examination, that the District had not provided him with relevant information regarding Vista Paint's activities and that he had not referenced any Vista Paint discovery in his expert report.

On cross-examination, Waddell admitted that many of the recent samplings had revealed relatively low levels of contamination. He acknowledged that the Crucible site was not a "major impact" site. Waddell was unable to quantify the amount of VOC groundwater contamination caused by the Crucible site and did not calculate the amount of VOC contamination from that site that the NBGPP would remediate.

Crucible's expert, Andrew Kopania, acknowledged that Crucible had used PCE, TCE, and 1,1,1-TCA at the site. He also admitted that those VOC's had been released into the soil at the Crucible site. But he concluded there was no evidence that VOC releases at the Crucible site had impacted groundwater or migrated to downgradient monitoring wells. Kopania determined that the soil sampling conducted in 1985, 2002, and 2003 showed only modest shallow soil contamination rather than the type of significant release that would migrate down to the shallow aquifer. He also observed that there were no consistent detections of contamination from the shallow soil down to groundwater.

The environmental consulting firm that conducted the 2003 sampling reached the same conclusion. In its report, the firm wrote, "[The firm] recommends that no further action be required for this Site. It has been clearly demonstrated that the low concentrations of VOC's[,] where present beneath the Site, do not present a threat to human health or groundwater beneath the Site." The DTSC accepted the firm's conclusion and agreed no further investigation was necessary.

Kopania criticized Waddell's reliance on the District's 2011 sampling because they were one-time "grab" samples. Kopania testified that grab samples are not accepted by regulatory agencies as adequate to characterize contamination at a site.

Kopania believed that VOC contamination in the shallow aquifer at the Crucible site was caused by the adjacent Vista Paint site. Kopania's analysis of chemical signatures, particularly the concentration of the VOC stabilizer 1,4-dioxane, showed consistency between the contamination in groundwater and the contamination at the Vista Paint site. Kopania also believed, based on the VOC composition of the contamination, that other sites upgradient of the Crucible site, including the AC Products site, also caused contamination.

Northrop

Northrop owned and operated three sites in the project area: 500 East Orangethorpe Avenue (referred to as EMD), 1730 North Orangethorpe Park (Kester Solder), and 301 East Orangethorpe Avenue (Y-12), all in Anaheim, California. Northrop owned the EMD site from 1952 until 1995 and occupied the site for the vast bulk of that time. Northrop acquired the corporate owner of the Kester Solder site, Litton Industries (Litton), in 2001 or 2002. Litton had owned and occupied the site since 1967. Northrop occupied the Y-12 site from 1962 until 1994. It owned the Y-12 site from 1992 until 1995.

Northrop operated several degreasers at the EMD site and admitted using TCE, 1,1,1-TCA, and 1,1,-DCE there. At the time operations at the EMD site ceased in 1991, soil sampling revealed extensive VOC contamination. Northrop undertook remediation

of the EMD site under the supervision of the RWQCB. All existing buildings at the site were demolished. Northrop installed and operated a soil vapor extraction system in the area of greatest contamination. After completing that extraction process, Northrop excavated soil in the area down a depth of approximately 40 feet below the surface, including a clay layer 10 feet in thickness. The resulting excavation was filled with soil from offsite. After remediation, the RWQCB reviewed soil and groundwater data from the site to determine whether the remaining contamination posed a threat to groundwater. The RWQCB concluded it did not. In a 1991 letter, the RWQCB wrote, "The data from the soil investigation and remediation activities that have taken place indicate that the VOC's that remain in the soil at the site do not appear to be present in concentrations that would result in a significant impact on water quality." While the RWQCB concluded that shallow groundwater at the site had been affected by onsite VOC contamination, the RWQCB believed that contamination in deeper groundwater may have originated from offsite sources because the concentration of contaminants in the deeper groundwater was higher than the concentration in shallow groundwater. Following further groundwater monitoring, the RWQCB repeated its conclusion in 1993: "Several years of site monitoring have indicated that contaminants in the groundwater beneath the site probably originate from an off-site source."¹⁴

¹⁴ Around this time, the District's staff reviewed Northrop's activities. Although they found that Northrop's soil study and cleanup was "thorough and comprehensive," the District was concerned that the site's impact on groundwater remained inadequately investigated.

The District performed additional soil and groundwater sampling in 2010 at locations selected by its expert witness Waddell. The soil samples showed VOC contamination at or below Northrop's remediation goal of one part per million. The groundwater samples showed relatively low levels of contamination.

Based on these investigations, Waddell opined that Northrop had released TCE and 1,1,1-TCA at the EMD site. Waddell also opined that these releases remained a source of groundwater contamination with TCE, 1,1,1-TCA, and 1,1-DCE. Waddell's opinion relied upon his analysis of the degradation time of 1,1,1-TCA into 1,1-DCE, the continued presence of contaminated groundwater under the site, and other factors.

Waddell believed that groundwater contamination from the EMD site would be captured by at least one, and possibly three, extraction wells as part of the NBGPP. On cross-examination, however, Waddell admitted that it would take approximately one to two years for groundwater under the EMD site to migrate to the District's extraction wells. Groundwater flowing under the EMD site prior to that time would therefore not be captured by the extraction wells.

Northrop's expert witness on site conditions, Glenn Tofani, testified that any contamination at the EMD site would not impact the shallow aquifer. Tofani based his opinion on a comparison of the concentrations of VOC contaminants at monitoring wells upgradient and downgradient of the site, groundwater VOC concentrations at the site, and the results of the District's 2010 groundwater sampling. Among other observations, Tofani determined that VOC concentrations in groundwater downgradient of the EMD site were similar to upgradient concentrations, both historically and in 2010. (Waddell

admitted that the 2010 groundwater samples showed VOC concentrations consistent with upgradient sources.) Tofani also refuted Waddell's conclusion that the degradation time of 1,1,1-TCA into 1,1-DCE showed that the EMD site was a source of groundwater contamination. Based on Tofani's analysis, the contamination originated from a source several thousand feet upgradient of the site.¹⁵

At the Kester Solder site, Litton (the prior owner) stored and repackaged PCE. Testing revealed PCE contamination in the shallow soil, perched groundwater, and shallow aquifer. It was undisputed at trial that PCE had been released at the site.

With the approval of the RWQCB, Northrop installed and operated a soil vapor extraction system to remediate VOC contamination at the Kester Solder site. The system operated between 2007 and 2009. During that time, it removed almost 1,000 pounds of

¹⁵ Northrop offered testimony from a second expert witness, John Lambie, who testified regarding the necessity and reasonableness of the NBGPP. He agreed with defense expert Larson that the VOC plume in the North Basin area was stable and chemical concentrations were not increasing. As part of his analysis, Lambie calculated the volume of VOC's flowing into groundwater from each of Northrop's sites. Lambie relied on a similar upgradient-downgradient analysis as Tofani, but he concluded that the EMD site did contribute VOC's, including TCE and 1,1-DCE, to groundwater. Lambie came to similar conclusions about the Kester Solder site (for PCE) and the Y-12 site (for TCE and 1,1-DCE). Lambie compared the total estimated volume of VOC releases from Northrop's sites to the total VOC volume in the NBGPP treatment area. He concluded that Northrop's sites had contributed 2.2 percent of the PCE volume, 10.4 percent of the TCE volume, and 13.3 percent of the 1,1-DCE volume. Based on these contribution estimates, Lambie determined the proportion of the District's NBGPP expenditures for which Northrop would be responsible. Lambie's estimates were not based on the actual amount of VOC contamination captured by the District's extraction wells but on the total amount of VOC contamination in the area to be treated by the NBGPP. Lambie testified that the latter calculation was the most equitable: "So looking at the entirety of the problem, whether it's captured or not, is, in my view, the equitable way to look at the mass contribution of a party."

VOC's. The RWQCB issued a no further action letter at the Kester Solder site in 2010. VOC contamination in perched groundwater remains, however, and Northrop is currently working with the RWQCB to formulate a remediation plan for that contamination as well.

Based on Northrop's initial testing, Waddell concluded that PCE from the Kester Solder site had reached the shallow aquifer. Waddell testified that contamination at the Kester Solder site had created a plume of PCE contamination that had reached one of the District's extraction wells and would be remediated by that well if the NGBPP were constructed. Based on comparisons between the PCE contamination in upgradient and downgradient monitoring wells, Waddell believed the Kester Solder site—particularly contamination in perched groundwater—continued to contribute to PCE contamination in the shallow aquifer.

Tofani agreed that the Kester Solder site had contributed to PCE contamination in the shallow aquifer in the past. But he concluded that Northrop's soil remediation had removed the site as a source for further PCE contamination. His conclusion was supported by his own analysis of the concentrations of PCE contamination in upgradient and downgradient monitoring wells. His analysis found there was no increase in PCE concentrations as groundwater flowed beneath the Kester Solder site. Moreover, even if the Kester Solder site were still contributing to VOC contamination in the shallow aquifer, Tofani believed any such contamination would be remediated by a recirculation well Northrop had installed at its Y-12 site, downgradient of the Kester Solder site.

At its Y-12 site, Northrop's operations included a quench tank that was cleaned with solvents and a degreaser. Northrop admitted that TCE and 1,1,1-TCA were among the solvents it used. It was undisputed at trial that TCE, 1,1,1-TCA, and at least a small amount of PCE had been released at the site.

After an initial investigation that did not disclose significant contamination, monitoring activities in the early 2000's revealed more serious soil and groundwater VOC contamination at the site. Northrop commissioned a series of tests, including a soil vapor survey and dozens of groundwater monitoring wells, to characterize the nature and extent of VOC contamination. Northrop developed a remedial action plan consisting of a dual phase soil vapor extraction system. The RWQCB approved the plan in 2008, and Northrop began remediation. By the time of trial, the system had removed approximately 20,000 pounds of VOC's, with the majority extracted in the first year of the system's operation. Also with the approval of the RWQCB, Northrop installed a treatment and recirculation well at the downgradient edge of the Y-12 site. The well captured and remediated VOC-contaminated groundwater in the shallow aquifer. Although Northrop encountered design hurdles at the beginning of the well's operation, the treated water currently released by the well meets drinking water standards. Northrop's remediation efforts have been reflected in decreasing VOC contamination in most downgradient monitoring wells.

Waddell reviewed the sampling data and concluded that substantial PCE releases had occurred at multiple locations at the Y-12 site. For one large area of PCE contamination, Waddell believed the concentration of PCE was higher at the Y-12 site

when compared to the adjacent site, occupied by nonparty Aero Scientific, showing that the release occurred at the Y-12 site. On cross-examination, however, Waddell admitted that he had interpreted the data incorrectly: The concentrations at the Aero Scientific site were higher than the concentrations at the Y-12 site, indicating that the release did *not* occur at Northrop's site. Nonetheless, Waddell believed that PCE, TCE, and 1,1,1-TCA (and its breakdown products) from the Y-12 site had contaminated groundwater in the shallow aquifer. Although Northrop's recirculation well would capture some onsite contamination, Waddell testified it would have no effect on contamination that had already migrated beyond the well. The District's NBGPP extraction wells would capture this contamination as well as contamination that continues to flow from the Y-12 site.

Tofani acknowledged that VOC contamination remained at the Y-12 site, notwithstanding Northrop's remediation efforts. Tofani estimated that approximately 200 to 300 pounds (or 1 to 2 percent of the total) remained to be extracted by Northrop's soil vapor extraction system. The remaining VOC's would be extracted by 2014. At that point, in Tofani's view, the Y-12 site would no longer be contributing significantly to groundwater contamination and the recirculation well could be decommissioned.

At the time of trial, though, the Y-12 recirculation well remained in operation, and Tofani admitted that it does not capture all of the contamination emanating from the site. Because the well captured contamination from upgradient offsite sources, however, Tofani testified that Northrop's efforts achieved a "net balance," i.e., the recirculation well remediated at least the same amount of offsite contamination as the amount of onsite contamination that escaped remediation.

Tofani believed adjacent sites, including Aero Scientific, had contributed significant amounts of PCE and 1,1,1-TCA contamination to groundwater under the Y-12 site. Tofani analyzed sampling results at the Aero Scientific site and determined that a PCE release at that site had not only contaminated groundwater but migrated laterally into the shallow soil at the Y-12 site. While a separate, smaller release of PCE had occurred on another portion of the Y-12 site, Tofani concluded that the Y-12 PCE release had not impacted groundwater because it extended only to a depth of 10 to 15 feet below ground surface.

Statement of Decision

Following trial, the court issued a tentative decision finding in favor of defendants on the statutory causes of action and soliciting responses from the parties regarding potential additional bases for its decision. After several rounds of briefing, the court issued a 74-page statement of decision. The statement of decision recounted the history of the litigation, the District's allegations, the development of the NGBPP, and the court's view of the evidence presented at trial. It also assessed each of the District's statutory claims and explained why the District did not prevail. The statement of decision concluded, among other things, that defendants had not caused the District to develop the NBGPP, that the non-Northrop defendants had not caused contamination in the shallow aquifer at all, that the NBGPP was not necessary to address groundwater contamination in the North Basin area, that the District had not complied with the NCP during development of the NBGPP, that the District's costs were merely "investigatory" and thus

not recoverable under the OCWD Act, and that the District was not entitled to a declaration that defendants were liable for future NBGPP costs.

The court spent the bulk of its statement of decision discussing causation under the HSAA. Although the court did not explicitly apply its discussion to the District's claim under the OCWD Act, it appears the court intended its discussion to apply to that statute as well.

The court prefaced its causation analysis with a section entitled "Weaker Evidence and Witness Credibility." In that section, the court provided an overview of its reasons for distrusting and failing to credit the District's evidence, including in particular its expert witness Waddell. The court faulted the District for offering weaker evidence where it could have introduced stronger evidence. (See Evid. Code, § 412.) For example, the court noted that the District did not undertake a mass transport analysis of VOC contamination, it did not create an updated map of the VOC contamination plumes, it did not calculate natural attenuation rates, and it did not conduct an adequate analysis of the costs and benefits of the NBGPP. The court criticized the District for relying on grab samples to determine the nature and extent of VOC contamination at defendants' sites.¹⁶ And the court questioned Waddell's credibility in light of the District's failure to provide relevant information to him, his creation of a misleading labeling system to

¹⁶ The court credited expert testimony that grab samples were only a snapshot of conditions at a portion of a site, were not indicative of past groundwater conditions or trends, were not reproducible, and were not accepted by California regulatory agencies as the sole method for determining whether contamination at a site has impacted groundwater.

characterize the effect of contamination at defendants' sites on groundwater, and his use of a misleading demonstrative chart that minimized the amount of contamination at a nonparty site.

The court applied the traditional "substantial factor" causation standard to the District's claims. (See, e.g., *Viner v. Sweet* (2003) 30 Cal.4th 1232, 1240 (*Viner*)). In doing so, the court focused on the NBGPP as a whole. The court found that "there was no evidence that the conduct of any one Trial Defendant, or even the conduct of the Trial Defendants considered together, was sufficient to necessitate the NBGPP." The court further found, "Substantial trial evidence demonstrated that the District would have approved the NBGPP even if any one of the Trial Defendants or even if all Trial Defendants had not been operating in the NBGPP area." For example, "None of the trial defendants caused the nitrate or perchlorate contamination, and that problem was a major factor in the decision to approve the more costly, centralized treatment plan. In sum, the Trial Defendants' activities were not a 'but for' cause of, or a substantial factor in, the District's decision to approve a centralized water treatment plan for the NBGPP."

The court made additional factual findings regarding conditions at defendants' sites. In general, the court wrote, "The weight of the credible trial evidence failed to establish a causal connection between any Trial Defendant's localized releases of hazardous substances into the soil and costs the District has already incurred and might incur in the future. For example, there is no direct evidence of any release of VOC's to the shallow aquifer in the NBGPP area by any Trial Defendant except Northrop. . . . Although the court found Northrop's historical activities at Kester [Solder] and Y-12

resulted in shallow aquifer contamination, the [c]ourt finds that Northrop, under the [RWQCB's] supervision, has remediated, or is currently remediating, those contaminant releases to levels exceeding those contemplated by the NBGPP, without the District reasonably incurring any remediation or removal expenses."

As to the Alcoa site, the court concluded that any VOC releases there did not impact the shallow aquifer: "No VOC's of any kind were detected at [the Alcoa site] in the main soil borings between the water table and a point approximately 30 feet above the water table. . . . [Alcoa's] expert, Richard Weiss, testified without contradiction that if VOC's passed through the soil column underneath [the Alcoa site] and into the shallow aquifer, there would have been detectable amounts of VOC's in the lower soil." In addition, the soil composition at the site made migration down to the shallow aquifer unlikely: "Thick layers of clay underlying the [Alcoa] site discouraged migration of VOC's from the soil to the shallow aquifer." Given Waddell's credibility issues, and Alcoa's successful effort to remediate the soil at the site, the court found the District had not proved causation.

As to Arnold, the court weighed the conflicting testimony regarding its TCE use and concluded that the District had not shown Arnold used that solvent at its site. Although Arnold acknowledged using 1,1,1-TCA, the court determined "there is insufficient evidence that Arnold caused a release of 1,1,1-TCA or 1,1-DCE into soil." On that basis, the court rejected "Waddell's opinion that Arnold's operations contaminated groundwater or threaten today to contaminate groundwater."

The court found that the District's allegations against CBS were limited to potential PCE contamination. For two of CBS's three sites, 1300 East Valencia and 700 Sally Place, the court concluded that CBS did not use PCE at all. And, in any event, PCE contamination detected at 1300 East Valencia "[did] not go all the way from just below the surface to groundwater," indicating that groundwater was unaffected by any contamination there. For the third site, 500 South Raymond, the court did not believe that any PCE releases at that site impacted groundwater or posed a threat to groundwater. The court credited the testimony of CBS's expert witness, Daniel Stephens, whose investigation showed that PCE contamination "has dissipated to non-detect levels . . . before the water table is reached." The court concluded that VOC groundwater contamination at the 500 South Raymond site was caused by offsite sources.

As to Crucible, the court found that VOC contamination at the site did not reach groundwater. The court found the shallow soil sampling, which did not detect VOC contamination at 40 feet below the surface, more persuasive than the District's grab samples showing deeper contamination. The court determined that VOC contamination in deeper soil at the Crucible site was likely caused by migration from offsite sources.

The court found that Northrop used and released 1,1,1-TCA and TCE, but not PCE, at its EMD site. The court reviewed the history of remediation at the site and concluded that "the weight of credible evidence supports a finding that the EMD site, following remediation in 1991, did not then and does not now present a significant threat to groundwater quality." Data collected by the District in 2010 "demonstrates there is no perceptible contribution from the EMD site to groundwater contamination as

groundwater passes below EMD." The court concluded, "The District's evidence concerning shallow aquifer contamination or the threat thereof attributable to Northrop's EMD site was not persuasive."

At the Kester Solder site, the court found, PCE was stored, mixed, and repackaged. PCE was released on the edge of the site and contaminated shallow soil, perched groundwater, and the shallow aquifer. Following Northrop's remediation efforts, however, the court concluded that the Kester Solder site was no longer a "source of potential groundwater contamination" and "is not contributing to PCE contamination in the shallow aquifer." While the court acknowledged that perched groundwater at the site remains contaminated (and Northrop is attempting further remediation), the court rejected Waddell's opinion that the site "remains a source of groundwater contamination." Instead, the court was persuaded by Northrop's expert witness, Glenn Tofani. Even if the Kester Solder site were still causing groundwater contamination, the court believed Northrop's recirculation well at its Y-12 site would capture any such contamination.

Regarding the Y-12 site, the court found, "Without dispute, TCE was released . . . that [has] impacted groundwater." PCE, however "was not used by Northrop at Y-12." While PCE was found in shallow soil at the site, the court concluded based on testing data that "Y-12 is not a source of PCE groundwater contamination." The court found that Northrop's remediation efforts had been largely successful, with 98 percent of VOC contamination having been removed from the soil and a recirculation well treating the shallow aquifer to drinking water standards. The court concluded, "At the time of trial it was estimated that remediation of the perched zone would be completed by 2014,

at which point the circulation well will no longer be necessary because the site will no longer be a source of elevated VOC's."

The court's statement of decision also considered whether any NBGPP costs should be allocated to defendants. The court found that certain contaminants, such as nitrate and perchlorate, were introduced by the District's groundwater recharge activities, which involved (among other things) discharging contaminated Colorado River water into the North Basin area. Regarding VOC contamination, the court wrote, "the evidence is overwhelming that many entities other than the Trial Defendants contributed to VOC releases into the soil and groundwater in the NBGPP area. In addition, the District's recharge activities contributed not only to VOC contamination in the shallow aquifer, but also contributed to the commingling of different-sourced VOC contaminants, making it more difficult, if not impossible, to determine the potentially responsible party. [¶] The Court further finds that the conduct of the District and entities other than the Trial Defendants are a substantial factor in the District's decision to develop the NBGPP. There is no factual basis for allocation of responsibility for past or future expenditures among the Trial Defendants or as between one or more Trial Defendant and the District."

With respect to the District's claim under the HSAA specifically, the court determined that it was required to show that the NBGPP was consistent with the NCP, the federal regulations governing remedial environmental actions, in order to recover. (40 C.F.R. § 300.1 et seq.) The court found that the NBGPP was not consistent with the NCP because (1) the District did not involve the public in selection of the remedy for VOC contamination in the North Basin; (2) the District did not adequately undertake required

investigations, including a remedial investigation, a feasibility study, and a conceptual site model; and (3) the District did not show the NBGPP was a cost-effective response to contamination in the North Basin.

The court articulated four bases for its rejection of the District's claim under the OCWD Act. First, the court found that the District had not satisfied the preconditions for cost recovery under the statute. The court interpreted the OCWD Act to allow cost recovery under two situations: either the contamination must be "cleaned up or contained [or] the effects thereof abated" or necessary action must have been taken to address "threatened contamination." (OCWD Act, § 8, subd. (c).) As to the first situation, the court found that the NBGPP had not yet been implemented, so the District had not yet cleaned up, contained, or abated any contamination. As to the second situation, the court found that the consequences of the contamination were not urgent enough to qualify as a threat. Second, the court found that funds already expended by the District were merely "investigatory" and thus not recoverable under the OCWD Act. (OCWD Act, § 8, subds. (a)-(c).) Third, the court found that the NBGPP was not a "reasonable" response to contamination in the North Basin area. Fourth, the court found that the NBGPP was not a "necessary" response to contamination in the North Basin area, i.e., the District did not show "each Trial Defendant's conduct was a substantial factor in the decision to develop the NBGPP."

The court rejected the District's request for a declaration holding defendants liable for future NBGPP costs because it found (1) the District did not adequately investigate the need for the NGBPP (including its failure to create updated maps of VOC

contamination, analyze the threat to the deep aquifer, and calculate natural attenuation rates); (2) the District did not adequately assess the costs and benefits of the NBGPP, particularly after the cost increased to over \$200 million; (3) the NBGPP was not necessary to protect the deep aquifer or remediate VOC contamination the shallow aquifer; and (4) the District did not adequately consider the effects of source removal on VOC contamination levels in the North Basin area. The source removal referenced by the court included defendants' RWQCB-approved remedial actions and the efforts of nonparties to remediate other sites in consultation with various regulatory bodies.

After summarizing its conclusions, the court found in favor of defendants, and against the District, on its claims under the OCWD Act and the HSAA and for declaratory relief. The court further found that each defendant was "entitled to a judicial declaration that it has no liability to the District for damages, response costs, or other costs claimed by the District, or any future costs associated with the NBGPP."

The District's Legal Claims

Three months after the court's statement of decision, defendants filed a motion for judgment on the District's remaining claims for negligence, nuisance, and trespass. Defendants argued that the court's causation findings in its statement of decision would apply in any jury trial on the District's claims. In defendants' view, these findings

precluded recovery on the District's claims for negligence, nuisance, and trespass because those claims each required a showing of causation.¹⁷

The District opposed. Analogizing to principles of collateral estoppel, the District argued that the court's causation findings were not essential to its decision (because it found alternative bases to rule in favor of defendants) and they were not identical to the findings required on its remaining claims (because they do not require the same showing of causation). The District also argued that new facts had arisen after the bench trial, including additional evidence of continuing groundwater contamination by the Crucible site and Northrop's Y-12 site. The District contended these new facts prevented the court from applying its prior findings on causation to the District's remaining claims. As to Northrop, the District additionally contended that a jury could award damages for past VOC contamination (e.g., investigatory costs) notwithstanding the court's causation findings.

The court granted the motion for judgment. It agreed that the District's claims for negligence, nuisance, and trespass required the District to establish causation as to each defendant. Given the court's causation findings in its statement of decision, it found that the District could not prevail on its remaining claims. The court did not believe the District was entitled to offer new evidence in support of its claims.

¹⁷ As noted above, the court previously granted several defendants' motions for summary adjudication of the District's negligence claim on statute of limitations grounds. The motion for judgment as to the District's negligence claim was therefore brought only by CBS and Crucible.

Judgment

Following further briefing, the court entered judgment in favor of defendants, and against the District, on each of the District's causes of action. The judgment included a declaration that defendants "have no liability to the [District] for damages, response costs, or other costs claimed by the [District], or any future costs." The District appeals.

DISCUSSION

I. HSAA

A. Overview

The District challenges the court's judgment on its HSAA claim. It primarily contends the court prejudicially erred by misinterpreting the elements of the claim, including causation, necessity of response costs, and NCP consistency. The HSAA is California's counterpart to the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA; 42 U.S.C. § 9601 et seq.). (*Foster-Gardner, Inc. v. National Union Fire Ins. Co.* (1998) 18 Cal.4th 857, 865, fn. 4.) Among other things, it implements California's responsibilities under CERCLA's "superfund" program and establishes a Hazardous Substance Account to fund environmental remediation actions and related efforts. (*City of Lodi v. Randtron* (2004) 118 Cal.App.4th 337, 351 (*City of Lodi*); *BKHN, Inc. v. Department of Health Services* (1992) 3 Cal.App.4th 301, 307, fn. 2.)

The HSAA also includes a private right of action. It provides, in relevant part, that "[a] person who has incurred response or corrective action costs in accordance with this chapter, Chapter 6.5 (commencing with Section 25100), or the federal act may seek

contribution or indemnity from any person who is liable pursuant to this chapter."

(Health & Saf. Code, § 25363, subd. (d).)¹⁸ The scope of this private right of action is at issue in the appeal.

The HSAA adopts CERCLA's standards for determining liability: "'Responsible party' or 'liable person,' for the purposes of this chapter, means those persons described in Section 107(a) of the federal act (42 U.S.C. Sec. 9607(a))." (Health & Saf. Code, § 25323.5, subd. (a)(1); see *Gregory Village Partners, L.P. v. Chevron U.S.A., Inc.* (N.D.Cal. 2011) 805 F.Supp.2d 888, 897 ["A claim under the HSAA has the same elements as a claim under CERCLA."].)

As relevant here, CERCLA imposes liability on "the owner or operator of a vessel or a facility, [¶] [or] any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of [¶], . . . from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance" (42 U.S.C. § 9607(a).) A liable person is responsible for, among other things, "all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan;" "any other necessary costs of response incurred by any other person consistent with the national contingency plan;" and "damages for injury to,

¹⁸ The quoted language became effective on January 1, 2016. (Stats. 2015, ch. 458, § 2.) Prior to that date, among other changes, the beginning of the sentence read, "Any person who has incurred removal or remedial action costs in accordance with this chapter" (Former Health & Saf. Code, § 25363, subd. (e).) The parties agree this was a nonsubstantive change in the context of this appeal, so we will refer to the current language in our discussion.

destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release[.]” (42 U.S.C.

§ 9607(a)(4)(A)-(C).)

Under CERCLA and the HSAA, “[t]o prevail in a private cost recovery action, a plaintiff must establish that (1) the site on which the hazardous substances are contained is a “facility” under CERCLA’s definition of the term, Section 101(9), 42 U.S.C.

§ 9601(9); (2) a “release” or “threatened release” of any “hazardous substance” from the facility has occurred, 42 U.S.C. § 9607(a)(4); (3) such “release” or “threatened release” has caused the plaintiff to incur response costs that were “necessary” and “consistent with the national contingency plan,” 42 U.S.C. §§ 9607(a)(4) and (a)(4)(B); and (4) the defendant is within one of four classes of persons subject to the liability provisions of Section 107(a) [42 U.S.C. § 9607(a)].” (*Carson Harbor Village, Ltd. v. Unocal Corp.* (9th Cir. 2001) 270 F.3d 863, 870-871 (*Carson Harbor I*) [en banc].)¹⁹

Once these elements are proven, an HSAA defendant is strictly liable for recoverable costs (Health & Saf. Code, § 25363, subd. (c)) unless the defendant establishes an applicable defense (*id.*, § 25323.5, subd. (b)) or the circumstances justify apportionment (*id.*, § 25363, subds. (a)-(b)). A similar scheme exists under CERCLA: “Potentially responsible parties under CERCLA are strictly liable for cleanup costs, [citation], . . . subject only to the statute’s narrow defenses for damages caused solely by

¹⁹ The District contends it is not a “private” plaintiff, but rather a “State” under CERCLA, and need only prove that its costs are “not inconsistent” with the NCP. (See 42 U.S.C. § 9607(a)(4)(A).) We disagree and will address this argument in part I.C.2., *post*.

acts of God, war, or third parties." (*Westfarm Associates L.P. v. Washington Suburban Sanitary Com.* (4th Cir. 1995) 66 F.3d 669, 677; see 42 U.S.C. § 9607(b).) As noted, the HSAA largely incorporates CERCLA's defenses. (Health & Saf. Code, § 25323.5, subd. (b).)

B. *The District's Ability to Bring Suit Under the HSAA*

Before we reach the District's challenge, we will consider a threshold issue raised by defendants, which appears to be one of first impression: Can the District bring a suit for cost recovery under the HSAA at all? Although defendants did not raise this argument in the trial court, we will exercise our discretion to consider it because it raises a pure question of law, the facts surrounding which are undisputed and could not be altered by the presentation of additional evidence. (See *In re Marriage of Priem* (2013) 214 Cal.App.4th 505, 510-511.)

To put the parties' arguments in context, we will briefly review the purposes and scope of the HSAA. The HSAA's objectives are the following: "(a) Establish a program to provide for response authority for releases of hazardous substances, including spills and hazardous waste disposal sites that pose a threat to the public health or the environment. [¶] (b) Compensate persons, under certain circumstances, for out-of-pocket medical expenses and lost wages or business income resulting from injuries proximately caused by exposure to releases of hazardous substances. [¶] (c) Make available adequate funds in order to permit the State of California to assure payment of its 10-percent share of the costs mandated pursuant to Section 104(c)(3) of the federal act (42 U.S.C. Sec. 9604(c)(3))." (Health & Saf. Code, § 25301.)

"To implement these purposes, HSAA provides a comprehensive and detailed scheme to ensure the timely and cost-effective cleanup of hazardous substance release sites. It establishes authority, procedures, and standards to carry out the investigation, removal and remediation of contaminated sites ([Health & Saf. Code,] §§ 25355, 25356.1.5, 25355.7, 25355.8, 25358.3, subds. (a) and (c), 25363), issue and enforce a removal or remedial action order to any [responsible party] ([*id.*,] § 25358.3, subds. (a) and (f)), impose administrative or civil penalties for noncompliance of an order ([*id.*,] §§ 25359, 25359.2), recover costs and expenses incurred by the DTSC in carrying out HSAA ([*id.*,] § 25360, subd. (a)), determine by binding arbitration the apportionment of liability of [a responsible party] ([*id.*] §§ 25363, 25356.3, 25356.4), seek contribution from other [responsible parties] ([*id.*,] § 25359.5)^[20] and apply for compensation of loss caused by the release of a hazardous substance. ([*id.*,] §§ 25372 to 25381.)" (*City of Lodi, supra*, 118 Cal.App.4th at p. 352.)

The focus of the statutory scheme is the DTSC, which has "the sole authority to administer the statewide program for the remediation of hazardous waste contamination" at sites identified for remediation under the HSAA. (*City of Lodi, supra*, 118 Cal.App.4th at p. 355.) "Once DTSC has confirmed that contamination at a particular site poses a significant threat to human health or safety or to the environment and lists the site in its published list of hazardous substance release sites, the problem is designated as

²⁰ The cited provision concerns securing a site where hazardous substances have been released, e.g., by posted signs or fencing, rather than contribution. (Health & Saf. Code, § 25359.5.) Contribution is addressed in Health and Safety Code section 25363, which we will discuss in detail below.

one of statewide concern, requiring application of uniform standards, procedures, and remedies subject to the jurisdiction of DTSC." (*Ibid.*) In appropriate cases, the relevant RWQCB may also have authority over a specific site. (Health & Saf. Code, §§ 25356, subd. (h), 25356.1, subds. (a), (b), (c).)

In addition to defining the DTSC and RWQCB's role, the HSAA provides for a private right of action, as noted above. The relevant provision reads in full as follows: "A person who has incurred response or corrective action costs in accordance with this chapter, Chapter 6.5 (commencing with Section 25100), or the federal act may seek contribution or indemnity from any person who is liable pursuant to this chapter. An action to enforce a claim may be brought as a cross-complaint by any defendant in an action brought pursuant to Section 25360^[21] or this section, or in a separate action after the person seeking contribution or indemnity has paid response or corrective action costs in accordance with this chapter, Chapter 6.5 (commencing with Section 25100), or the federal act. A plaintiff or cross-complainant seeking contribution or indemnity shall give written notice to the director upon filing an action or cross-complaint under this section. In resolving claims for contribution or indemnity, the court may allocate costs among liable parties using appropriate equitable factors." (Health & Saf. Code, § 25363, subd. (d).)

The parties' dispute revolves around the word "indemnity" as it is used in this statute. Defendants contend the word "indemnity" limits plaintiffs who sue under the

²¹ This section describes the Attorney General's right of action to recover costs from liable parties at the request of the DTSC or RWQCB.

statute to an action for traditional equitable indemnity, i.e., only plaintiffs who are liable for response or corrective action costs under the HSAA enjoy the right to sue. Entities with no potential liability (so-called "volunteers") do not. (See, e.g., *Union Pacific Corp. v. Wengert* (2000) 79 Cal.App.4th 1444, 1447-1448 [describing traditional equitable indemnity].) The District contends the word "indemnity" simply means reimbursement, and any plaintiff who incurs costs to clean up a hazardous substance release may recover those costs from a party who is liable under the HSAA.

This issue is one of statutory interpretation. "Our fundamental task in interpreting a statute is to determine the Legislature's intent so as to effectuate the law's purpose. We first examine the statutory language, giving it a plain and commonsense meaning. We do not examine that language in isolation, but in the context of the statutory framework as a whole in order to determine its scope and purpose and to harmonize the various parts of the enactment. If the language is clear, courts must generally follow its plain meaning unless a literal interpretation would result in absurd consequences the Legislature did not intend. If the statutory language permits more than one reasonable interpretation, courts may consider other aids, such as the statute's purpose, legislative history, and public policy." (*Coalition of Concerned Communities, Inc. v. City of Los Angeles* (2004) 34 Cal.4th 733, 737.)

As an initial matter, we note that the language of the statute would appear to accommodate either interpretation of "indemnity" offered by the parties. The only limitation on plaintiffs who may sue under the statute is that a plaintiff must have "incurred response or corrective action costs" under the HSAA or CERCLA. (Health &

Saf. Code, § 25363, subd. (d).) The phrase "any person who is liable" refers to prospective defendants, not plaintiffs. (*Ibid.*) The remainder of the statutory language concerns procedure, and it could apply equally to actions for traditional equitable indemnity or simple cost recovery actions. Although the final sentence of the statute contemplates equitable apportionment among liable parties, the language does not imply that such equitable apportionment must occur in all cases or that a suit may not be brought unless such equitable apportionment is possible.

We must therefore focus on the word "indemnity." The plain meaning of the term supports the District's interpretation. Black's Law Dictionary defines indemnity broadly as "[a] duty to make good any loss, damage, or liability incurred by another," "[t]he right of an injured party to claim reimbursement for its loss, damage, or liability from a person who has such a duty," and "[r]eimbursement or compensation for loss, damage, or liability in tort" (Black's Law Dict. (10th ed. 2014).) The dictionary provides several different examples of indemnity, including contractual indemnity, equitable indemnity, implied indemnity, and statutory indemnity. (*Ibid.*) The plain meaning of the term is not limited to defendants' narrow interpretation.

The HSAA's private right of action appears to be an instance of "statutory indemnity," which Black's Law Dictionary defines as "[i]ndemnity conferred by legislation" and cites as an example the common statutory obligation of corporations to indemnify their personnel. (Black's Law Dict., *supra.*) In California, for example, an employer has a general statutory obligation to indemnify its employees under many circumstances: "An employer shall *indemnify* his or her employee for all necessary

expenditures or losses incurred by the employee in direct consequence of the discharge of his or her duties, or of his or her obedience to the directions of the employer, even though unlawful" (Lab. Code, § 2802 subd. (a), italics added.) Similarly, "[a] depositor must *indemnify* the depositary" for expenses and damages caused by the thing deposited (Civ. Code, § 1833, italics added), and the detriment caused by wrongful conversion of personal property may be "an amount sufficient to *indemnify* the party injured" (*id.*, § 3336, italics added). In none of these causes must a plaintiff establish the elements of traditional equitable indemnity to recover the indemnification described in the statutes. (See *Stowe v. Fritzie Hotels, Inc.* (1955) 44 Cal.2d 416, 423-424 [applying Civil Code section 1833]; *Machinists Auto. Trades Dist. Lodge v. Util. Trailers Sales Co.* (1983) 141 Cal.App.3d 80, 81 [applying Labor Code section 2802]; *Myers v. Stephens* (1965) 233 Cal.App.2d 104, 116-118 [applying Civil Code section 3336].)

Defendants rely on our Supreme Court's statement that "there are only two basic types of indemnity: express indemnity and equitable indemnity." (*Prince v. Pacific Gas & Electric Co.* (2009) 45 Cal.4th 1151, 1157.) In this context, the Supreme Court explained, "[e]xpress indemnity refers to an obligation that arises ' "by virtue of express contractual language establishing a duty in one party to save another harmless upon the occurrence of specified circumstances." ' " (*Id.* at p. 1158.) Defendants' implication appears to be that statutory indemnity, as embodied in the disputed provision of the HSAA, does not exist in California.

Defendants misinterpret the Supreme Court's discussion. The Supreme Court considered the parties' potential indemnification obligations independent of any statutory

enactment. It did not foreclose the possibility that an indemnification obligation may arise by statute. Indeed, cases interpreting the statutes cited above, and similar statutes, refer to the obligations imposed thereunder as "statutory indemnity." (See, e.g., *Crouse v. Brobeck, Phleger & Harrison* (1998) 67 Cal.App.4th 1509, 1540; *Janken v. GM Hughes Electronics* (1996) 46 Cal.App.4th 55, 74, fn. 24.) Other statutes that impose a reimbursement obligation without using the words "indemnify" or "indemnification" are similarly described as "statutory indemnity" statutes. (See, e.g., *Gattuso v. Harte-Hanks Shoppers, Inc.* (2007) 42 Cal.4th 554, 559, 560; *Daza v. Los Angeles Community College District* (2016) 247 Cal.App.4th 260, 265; *Kantor v. Housing Authority of Fresno County* (1992) 8 Cal.App.4th 424, 428-429.) It is clear that the concept of statutory indemnity exists in California law. Defendants' contention that the reference to "indemnity" in the HSAA can only refer to traditional equitable indemnification is therefore unpersuasive.²²

The statute's use of the term "indemnity" to mean "reimbursement" is consistent with the meaning of that term in CERCLA jurisprudence. Under CERCLA, it is well

²² *Fullerton Redevelopment Agency v. Southern California Gas Co.* (2010) 183 Cal.App.4th 428 (*Fullerton Redevelopment*) does not address this issue. Although *Fullerton Redevelopment* described the HSAA private right of action as "limited to a claim for 'contribution and indemnity' and all such claims are 'equitable' in nature" (*id.* at p. 433), the import of the court's language (which quoted a lower court minute order) is unclear. The reference to "contribution and indemnity" simply repeats the terms of the statute. The reference to equity appears to mean that actions under the HSAA are equitable, rather than legal, in nature. In any event, the parties in *Fullerton Redevelopment* were all liable parties, so the court had no occasion to determine whether nonliable parties may sue under the HSAA. (*Id.* at p. 430.) Moreover, in light of our conclusion, we need not decide whether *Orange County Water District v. Arnold Engineering Co.* (2011) 196 Cal.App.4th 1110, 1126, already decided this issue in the District's favor.

established that a nonliable or "volunteer" plaintiff may bring a private cause of action for cost recovery. (42 U.S.C. § 9607(a); *United States v. Atlantic Research Corp.* (2007) 551 U.S. 128, 139 (*Atlantic Research*); *Kaufman & Broad-South Bay v. Unisys Corp.* (N.D.Cal. 1994) 868 F.Supp. 1212, 1215.) Such a private right of action by a nonliable party has been described as an "indemnity": "The language of CERCLA suggests Congress planned that an innocent party be able to sue for full recovery of its costs, i.e., *indemnity* under [42 U.S.C. § 9607(a)], while a party that is itself liable may recover only those costs exceeding its pro rata share of the entire cleanup expenditure, i.e., contribution under [42 U.S.C. § 9613(f)(1)]." (*Bedford Affiliates v. Sills* (2d Cir. 1998) 156 F.3d 416, 424 (*Bedford Affiliates*), italics added.)²³

Our review of the legislative history of this provision reveals no reason to depart from this analysis and limit the private right of action under Health and Safety Code section 25363, subdivision (d) to plaintiffs seeking traditional equitable indemnity. To the extent the legislative history sheds any light on the Legislature's intent, it shows that the "indemnification" described in this section extends to nonliable parties like the District. For example, the statute as originally enacted limited the private right of action to "any person found liable under this chapter." (Stats. 1987, ch. 1302, § 5.) The next year, however, the Legislature removed this liability limitation, allowing "[a]ny person who has incurred removal or remedial action costs in accordance with this chapter" to

²³ The United States Supreme Court later held that liable parties may *also* bring a private cause of action for indemnity under 42 United States Code section 9607(a). (*Atlantic Research, supra*, 551 U.S. at p. 141.) But this holding did not affect the right of nonliable parties to bring such an action as well. (*Id.* at pp. 136, 139.)

seek contribution or indemnification. (Stats. 1988, ch. 1401, § 1.) Although the statute underwent several additional revisions, the Legislature did not reinsert language limiting the private right of action to only liable parties.

Defendants point to language in a treatise that purports to identify the limits of the HSAA private right of action: "Unlike CERCLA, there is no express statutory authorization for private actions for enforcement under [the HSAA]." (11 Miller & Starr, Cal. Real Estate (4th ed. 2015) § 39.44, fn. omitted.) But private actions for "enforcement" (analogous to CERCLA's private enforcement action, 42 U.S.C. § 9659) are different from actions for "indemnity," as the treatise goes on to explain: "However, such actions are possible to recover indemnity or contribution once the costs are paid, even though the private owner could not sue for loss of use or lost profits damages." (Miller & Starr, § 39.44, fn. omitted.)

Of more direct relevance, the treatise states under the heading "Contribution or indemnity" the following: "Anyone found liable for cleanup costs who has entered into an agreement with the [DTSC], or who is in compliance with an order issued by the department, and who establishes by a preponderance of the evidence that he or she was only liable for a portion of the costs, may seek contribution and indemnity from any other person liable under the statute. (11 Miller & Starr, Cal. Real Estate, *supra*, § 39.44, fn. omitted.) While the treatise cites the statute at issue in this appeal, the treatise appears to conflate the various subdivisions of the section, each of which addresses different circumstances. For example, subdivision (a) provides that "a party *found liable* for costs recoverable under this chapter who establishes by a preponderance of the evidence that

only a portion of those costs are attributable to that party's actions shall be required to pay only for that portion." (Health & Saf. Code, § 25363, subd. (a), italics added.) Although subdivision (a) does not mention actions for contribution or indemnity, the treatise imports this language of liability into its discussion of such actions. To the extent the treatise purports to define the complete set of plaintiffs who may bring a private cause of action for indemnity under subdivision (d), we disagree that the ability to bring such an action is limited to liable persons. We reject defendants' contention that the District may not bring an action for cost recovery under the HSAA.²⁴

C. The Merits of the District's HSAA Claim

We next consider the merits of the District's HSAA claim and its contention that the court misinterpreted the elements of that claim. The District's contention presents a pure question of law, primarily statutory interpretation, which we review de novo. (*People ex rel. Lockyer v. Shamrock Foods Co.* (2000) 24 Cal.4th 415, 432 (*Shamrock Foods*); *Central Valley General Hospital v. Smith* (2008) 162 Cal.App.4th 501, 513 (*Central Valley*) ["Under the general rules applicable to a trial court's statement of decision, an appellate court independently reviews questions of law and applies the substantial evidence standard to findings of fact."].)

²⁴ Defendants alternatively offer the following argument: "[The] District does not appeal the HSAA claim under section 25363, subdivision (d), for contribution or indemnity that it pled in the operative complaint and that was tried to conclusion. . . . [The] District has therefore abandoned that issue in this appeal." (Fn. omitted.) This argument is frivolous. The District devoted the bulk of its opening brief to the merits of its HSAA claim, as did defendants in their respondents' brief. Which HSAA claim did the District address in its briefing, if not the claim "that it pled in the operative complaint and that was tried to conclusion"?

As we have discussed, the HSAA provides that a plaintiff "may seek contribution or indemnity from any person who is liable pursuant to this chapter." (Health & Saf. Code, § 25363, subd. (d).) The elements of a private HSAA claim are the following: "(1) the site on which the hazardous substances are contained is a "facility" under CERCLA's definition of the term, Section 101(9), 42 U.S.C. § 9601(9); (2) a "release" or "threatened release" of any "hazardous substance" from the facility has occurred, 42 U.S.C. § 9607(a)(4); (3) such "release" or "threatened release" has caused the plaintiff to incur response costs that were "necessary" and "consistent with the national contingency plan," 42 U.S.C. §§ 9607(a)(4) and (a)(4)(B); and (4) the defendant is within one of four classes of persons subject to the liability provisions of Section 107(a) [42 U.S.C. § 9607(a)]." (*Carson Harbor I, supra*, 270 F.3d at pp. 870-871.)

1. *Causation*

- a. *Overview*

The District contends the trial court misinterpreted the third element (causation). The District makes two interrelated arguments, which we will consider separately.

The District first argues that the court erroneously required the District to prove that *each defendant* released or threatened to release hazardous waste that caused the District to incur response costs. As we will explain, the District is correct that it was not required to prove a causal connection between a release *by each defendant* and its response costs. Instead, the District must establish a causal connection between a release or threatened release at a *site* (regardless of its source) and the District's response costs. Whether a given defendant is liable for releases or threatened releases at that site is

determined by the fourth element, which identifies classes of potentially responsible parties based on their relationship to the site.

The District next argues that the court erroneously required the District to show that each defendant was a substantial factor in the District's decision to develop the *entire* NBGPP. Again, we agree. The District was required to show only that a release or threatened release at a defendant's site was a substantial factor in the District's decision to incur some response costs.

Although we agree the trial court erred in interpreting the element of causation, we conclude there is no reasonable probability the court would have found the District had proved this element as to Alcoa, Arnold, CBS, and Crucible. As to Northrop, however, we conclude there is a reasonable probability the court would have made such a finding. We will explain the bases for these conclusions in the following parts.²⁵

b. *Defendant-Specific Versus Site-Specific Causation*

We agree with the District's first argument that the court erroneously required it to show that each defendant caused the District's response costs. Instead, it is only required to show a release or threatened release from a site and a causal connection between that release or threatened release and its response costs. "[V]irtually every court that has considered this question has held that a CERCLA plaintiff need not establish a direct

²⁵ Although we conclude it is reasonably probable the trial court would have made different findings on causation, this conclusion alone does not mandate reversal of the trial court's judgment in favor of Northrop on the District's HSAA claim. The court's judgment rested on several grounds, any one of which was sufficient to support the judgment. We will consider the District's contentions regarding those additional grounds below.

causal connection between the defendant's hazardous substances and the release or the plaintiff's incurrence of response costs." (*United States v. Alcan Aluminum Corp.* (3d Cir. 1992) 964 F.2d 252, 265 (*Alcan Aluminum*); see *State of New York v. Shore Realty Corp.* (2d Cir. 1985) 759 F.2d 1032, 1044 (*Shore Realty*)). "It is clear from the text, structure, and legislative history of [42 U.S.C. § 9607] that the provision does not require a plaintiff to show that a particular defendant caused either the release or the incurrence of response costs in order to prove liability." (*Kalamazoo River Study Group v. Menasha Corp.* (6th Cir. 2000) 228 F.3d 648, 655 (*Kalamazoo River*)).

The causation requirement under CERCLA and HSAA is therefore independent of a given defendant. (*Kalamazoo River, supra*, 228 F.3d at p. 655.) It focuses on whether there was a release or threatened release at the site or facility at issue, not whether the defendant caused the release or threatened release. For purposes of the third element, a plaintiff need prove only that a release or threatened release occurred at the site that caused the plaintiff to incur necessary response costs. (*Carson Harbor I, supra*, 270 F.3d at pp. 870-871.)

Whether a given defendant is liable is governed by the fourth element. This element identifies several categories of potentially liable defendants (or, in CERCLA terminology, "potentially responsible parties"). These categories include persons who might otherwise not be considered liable under traditional tort theories, e.g., current owners and operators of a contaminated site. (See 42 U.S.C. § 9607(a)(1).) These categories are based on the defendant's relationship to the site, not the defendant's relationship to the release or threatened release that caused the incurrence of response

costs. (See *Alcan Aluminum, supra*, 964 F.2d at p. 265 ["[T]he version [of CERCLA] ultimately passed by Congress . . . imposed liability upon a *class* of responsible persons without regard to whether the person specifically caused or contributed to the release and the resultant response costs."]; *Asarco LLC v. NL Industries, Inc.* (E.D.Mo. 2015) 106 F.Supp.3d 1015, 1031 (*Asarco*) ["Once the connection between the defendant and a hazardous waste site has been established (because the defendant fits into one of the four categories of responsible parties), 'it is enough that response costs resulted from "a" release or threatened release—not necessarily the defendant's release or threatened release.' "].)

The lack of a causal connection between a defendant's actions and the release or threatened release that caused the incurrence of response costs is instead an affirmative defense that the defendant must prove. CERCLA provides, "There shall be no liability under subsection (a) of this section for a person otherwise liable who can establish by a preponderance of the evidence that the release or threat of release of a hazardous substance and the damages resulting therefrom were caused solely by [¶] . . . [¶] (3) an act or omission of a third party" under specified circumstances. (42 U.S.C. § 9607(b).) This defense has been incorporated into the HSAA. (Health & Saf. Code, § 25323.5, subd. (b); see *id.*, § 25363, subd. (a).) Requiring a plaintiff to prove that a release or threatened release *by the defendant* caused the incurrence of response costs would render this affirmative defense superfluous. (*Kalamazoo River, supra*, 228 F.3d at p. 655; *Alcan Aluminum, supra*, 964 F.2d at p. 265; *Shore Realty, supra*, 759 F.2d at p. 1044.)

Although the District acknowledges it must show that a release or threatened release occurred at defendants' sites that caused it to incur necessary response costs, as discussed in the foregoing authorities, it contends the standard for causation in this context is relaxed. It argues that plaintiff need show only "that it incurred response costs in cleaning up pollution at the site which is of a similar kind to the pollution generated by the defendant." The District is incorrect. It confuses the showing under third element (causation) with the fourth element (potentially liable parties). The primary authority cited by the District, *United States v. Monsanto Co.* (4th Cir. 1988) 858 F.2d 160 (*Monsanto*), considered scope of the *fourth* element, specifically the potential liability of so-called "generator" defendants under section 9607(a)(3) of title 42 of the United States Code. (*Monsanto, supra*, 858 F.2d at p. 169.) A generator defendant is liable if a plaintiff proves it is a "person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances." (42 U.S.C. § 9607(a)(3).) In that context, *Monsanto* explained that CERCLA imposes liability on defendants who generated hazardous substances at one site and arranged for disposal of the hazardous substances at another site, so long as the defendant's hazardous substances were chemically similar to those released or threatened to be released at the disposal site. (*Monsanto, supra*, 858 F.2d at p. 169 & fn. 15 ["[CERCLA plaintiffs] must . . . present evidence that a generator defendant's waste was shipped to a site and that hazardous

substances similar to those contained in the defendant's waste remained present at the time of release."].) Regardless of *Monsanto's* interpretation of the fourth element for generator defendants, the third element must still be satisfied. *United States v. Wade* (E.D.Pa. 1983) 577 F.Supp. 1326, also cited by the District, involved generator defendants, like *Monsanto*, and it is unpersuasive for the same reasons.

Asarco, on which the District also relies, does not support the District's relaxed causation standard either. *Asarco* rejected the requirement that a CERCLA plaintiff prove that a *particular defendant's* release caused a plaintiff's response costs. (*Asarco, supra*, 106 F.Supp.3d at p. 1031 [rejecting "trac[ing]" or "fingerprint[ing]" a particular defendant's hazardous waste].) As we have discussed, CERCLA does not require such a showing. But, *Asarco* confirms that a CERCLA plaintiff must still prove that an actual or threatened release caused its response costs under CERCLA's third element. (*Asarco, supra*, 106 F.Supp.3d at p. 1031 ["Response costs must be caused by an actual or threatened release."].)

The District claims *Artesian Water Co. v. Government of New Castle County* (D.Del. 1987) 659 F.Supp. 1269 (*Artesian Water*) supports its position. Again, however, this case confirms that CERCLA requires a showing of causation as part of its third element: "CERCLA's strict liability scheme does not diminish the necessity of demonstrating a causal connection between a release or threatened release and the incurrence of costs by a . . . plaintiff. [Citations.] [Plaintiff] must therefore show that it incurred costs as a result of the release or threatened release of hazardous substances from the Site." (*Id.* at p. 1282.) *Artesian Water* expressly confirmed that traditional tort

principles of causation, including substantial-factor causation where multiple sources may have contributed to contamination, govern CERCLA's causation requirement. (*Id.* at p. 1283; see *Thomas v. FAG Bearings Corp.* (W.D.Mo. 1994) 846 F.Supp. 1382, 1394 [granting summary judgment because plaintiff could not show the release at issue caused groundwater contamination].) CERCLA's departure from traditional tort principles can be found in the omission of the defendant from its causation requirement, which as we have discussed focuses on whether a *release* caused plaintiff's response costs, rather than whether a *defendant* caused plaintiff's response costs.²⁶

The trial court's statement of decision is ambiguous with respect to the element of causation. In its initial treatment of the elements of the District's HSAA claim, the court correctly quoted the four CERCLA elements from a federal district court case. (*Castaic Lake Water Agency v. Whittaker Corp.* (C.D.Cal. 2003) 272 F.Supp.2d 1053, 1059 (*Castaic Lake*)). The court correctly noted that it must determine whether a release occurred at the sites in question (not whether each individual defendant caused a release) and whether such a release caused the District to incur response costs. After this initial

²⁶ The District relies heavily on a perceived distinction between so-called "one-site" cases, where the contamination and the remediation action occur at the same location, and so-called "two-site" cases, where the locations are different. We reject this distinction. As one federal district court explained, "After a review of the statute, its legislative history, and applicable case law, the Court holds that the analytical framework that applies in a two-site CERCLA case is no different than the framework that applies in a one-site CERCLA case. . . . Rather, [42 U.S.C. § 9607(a)] always requires a plaintiff to prove, in its prima facie case, that a release from a facility for which the defendant is a responsible person caused the incurrence of response costs." (*Asarco LLC v. Cemex, Inc.* (W.D.Tex. 2014) 21 F.Supp.3d 784, 804.)

statement, however, the trial court shifted its focus. The court repeatedly and incorrectly characterized the District's burden as follows: "The District had the burden to provide causation as to each Trial Defendant, i.e., a causal connection between each Trial Defendant's conduct and the District's response costs." In finding against the District, the court concluded, "The weight of credible trial evidence failed to establish a causal connection between any Trial Defendant's localized releases of hazardous substances into the soil and costs the District has already incurred and might incur in the future." By focusing on the conduct of each defendant, rather than the releases at each defendant's site, the court in these latter passages held the District to an incorrect causation standard. We will discuss the consequences of this error, and additional findings by the trial court, with respect to each defendant in parts I.C.1.d.-e., *post*.²⁷

²⁷ Defendants do not articulate a clear position on the issue of causation. On one hand, defendants appear to agree with the District that the correct causation standard focuses on the consequences of a release at a site for which defendant is liable. On the other hand, defendants cite the trial court's conclusions that defendants' own activities did not cause response costs as conforming to that standard. Viewing their briefing as a whole, it appears defendants believe the latter articulation of the standard was correct. Defendants state, for example, that the "District was required to prove NBGPP would actually treat off-site contamination released *by* Respondents [i.e., defendants], not contamination released by another entity." For the reasons we have discussed, this articulation of the HSAA's causation standard is incorrect. In any event, defendants devote the bulk of their discussion to the issue of whether substantial evidence supported the trial court's findings and do not address the potential prejudice stemming from the trial court's use of an incorrect causation standard. Defendants' heading for this section makes this focus clear: "Substantial evidence supports the finding that no respondent released contamination causing [the] District to incur response costs." (Some capitalization omitted.) This statement of the causation standard, which is limited to defendants' activities only, is incorrect.

c. "Some" Versus "All" Response Costs

As noted, the District also contends the trial court erred by requiring it to show that each defendant's conduct was a substantial factor in the District's decision to develop the entire NBGPP. We agree. CERCLA and the HSAA require only that the District show that a release or threatened release caused some necessary response costs, not that the release caused all costs incurred by the District in responding to a multitude of releases. (See *Carson Harbor I*, *supra*, 270 F.3d at pp. 870-871; *Santa Clara Valley Water District v. Olin Corp.* (N.D.Cal. 2009) 655 F.Supp.2d 1048, 1057 ["Cases within the Ninth Circuit support the conclusion that a CERCLA *prima facie* case requires a plaintiff to show that a release caused the incurrence of some response costs but it does not require that the release cause all of the recoverable response costs."].) Once the District has shown a release or threatened release caused it to incur some necessary response costs, the causation standard is satisfied. Each defendant is responsible for those costs caused by the release or threatened release for which it is liable.²⁸

²⁸ If multiple releases or threatened releases each cause the same response costs, the defendants liable for those releases or threatened releases may each be responsible for the full extent of those response costs. Under the HSAA, however, a defendant may obtain apportionment of those costs in two ways. First, "a party found liable for costs recoverable under this chapter who establishes by a preponderance of the evidence that only a portion of those costs are attributable to that party's actions shall be required to pay only for that portion." (Health & Saf. Code, § 25363, subd. (a).) This affirmative defense, in contrast to the causation standard discussed above, focuses on the *actions* of the defendant in question. Second, if the evidence is insufficient to establish the first method of apportionment, "the court shall apportion those costs, to the extent practicable, according to equitable principles, among the defendants." (*Id.*, § 25363, subd. (b); see *id.*, § 25363, subd. (d) ["In resolving claims for contribution or indemnity, the court may allocate costs among liable parties using appropriate equitable factors."].) In its

The trial court's statement of decision does not conform to these legal principles. The court described the District's burden as follows: "[T]he District had the burden to prove by a preponderance of the evidence that each Trial Defendant caused or threatened to cause groundwater contamination and that but for each defendant's conduct, the NBGPP would not have been necessary. Stated another way, the District had the burden to prove that each Trial Defendant's conduct was a substantial factor in the decision to develop the NBGPP." As discussed in the previous part, the trial court incorrectly focuses on each defendant's conduct, rather than the releases or threatened releases for which each defendant is liable. And, in addition to that error, the court required the District to show that each defendant, standing alone, caused the entire NBGPP—even those portions of the project intended to address contamination completely unrelated to a given defendant and the releases or threatened releases for which it was liable. This was error. The correct standard requires the District to show only that it incurred some necessary response costs as a consequence of a release or threatened release for which a defendant is liable.

Similarly, at the outset of its causation discussion, the court concluded, "Based on the evidence presented, the Court finds that no Trial Defendant's conduct was a 'but for'

statement of decision, the trial court found, based on the failures of causation it identified, "[t]here is no factual basis for allocation of responsibility for past or future expenditures among the Trial Defendants or as between one or more Trial Defendant[s] and the District." Contrary to defendants' interpretation, the trial court did not apportion zero costs to defendants. Instead, it found no basis on which to make such an apportionment at all. To the extent the court's statement of decision could be read to make an allocation, it was simply relying on its causation findings, as we will discuss in part I.C.5., *post*.

cause of, or a 'substantial factor' in, the District's decision to approve the NBGPP." While the trial court did not err by using the substantial factor test for causation (see, e.g., *Artesian Water, supra*, 659 F.Supp. at p. 1283), it did err in selecting the objects of the causation inquiry by requiring a showing that each "Trial Defendant's conduct" caused the District "to approve the NBGPP." Instead, the trial court should have considered whether each release or threatened release caused the District to incur necessary response costs. We will discuss the consequences of this error, and additional findings by the trial court, with respect to each defendant in the next parts, *post*.

d. *Sufficiency of the Statement of Decision*

Based on these legal errors, the District argues the trial court's statement of decision is deficient because it omits material factual findings. It contends the judgment must be reversed on that basis alone to allow the trial court to make findings under the proper causation standard. (See *Weisz Trucking Co. v. Emil R. Wohl Construction* (1970) 13 Cal.App.3d 256, 263-264.) For reasons we will explain, we disagree.

"Ordinarily, when the court's statement of decision is ambiguous or omits material factual findings, a reviewing court is required to infer any factual findings necessary to support the judgment. [Citations.] This rule 'is a natural and logical corollary to three fundamental principles of appellate review: (1) a judgment is presumed correct; (2) all intendments and presumptions are indulged in favor of correctness; and (3) the appellant bears the burden of providing an adequate record affirmatively proving error.' "

(*Ermoian v. Desert Hospital* (2007) 152 Cal.App.4th 475, 494 (*Ermoian*).)

"In order to avoid the application of this doctrine of implied findings, an appellant must take two steps. First, the appellant must request a statement of decision pursuant to [Code of Civil Procedure] section 632; second, if the trial court issues a statement of decision, 'a party claiming omissions or ambiguities in the factual findings must bring the omissions or ambiguities to the trial court's attention' pursuant to [Code of Civil Procedure] section 634." (*Ermoian, supra*, 152 Cal.App.4th at p. 494; see *In re Marriage of Arceneaux* (1990) 51 Cal.3d 1130, 1134.)

"To bring defects in a statement of decision to the trial court's attention within the meaning of [Code of Civil Procedure] section 634, objections to a statement of decision must be 'specific.' [Citation.] The alleged omission or ambiguity must be identified with sufficient particularity to allow the trial court to correct the defect. [Citation.] 'By filing specific objections to the court's statement of decision a party pinpoints alleged deficiencies in the statement and allows the court to focus on the facts or issues the party contends were not resolved or whose resolution is ambiguous.' " (*Ermoian, supra*, 152 Cal.App.4th at p. 498.)

These requirements apply to omissions or ambiguities in a court's *factual* findings only. Since the doctrine of implied findings does not apply to the court's legal conclusions (which are reviewed de novo on appeal), this procedure does not apply to potential errors of law. (*Fladboe v. American Isuzu Motors, Inc.* (2007) 150 Cal.App.4th 42, 59 (*Fladboe*); see *Duarte Nursery, Inc. v. California Grape Rootstock Improvement Com.* (2015) 239 Cal.App.4th 1000, 1012 ["The statute applies only when there is an

omission or ambiguity in the trial court's decision, not when the party attacks the legal premises or claims the trial court's findings are irrelevant or unsupported by evidence."].)

The District points to two filings in the trial court that it contends preserved its objections to the trial court's statement of decision and vitiates application of the implied findings doctrine. Neither filing was sufficient. The first, entitled "Plaintiff's Objections and Counter Proposals to Defendants' Proposed Addition to Defendants' Statement of Decision [Proposed] Re Causation Evidence," was filed after the court issued its statement of decision. But, as its title implies, it was directed to an earlier filing by defendants, not the statement of decision itself. Even assuming it could be read as an objection to the statement of decision, the document explicitly does not request any further factual findings by the court: "These objections do not reargue the District's disagreements with this Court's factual determinations. Rather, the District objects to legal errors in Defendants' Proposed Addition that have now been incorporated into the Statement of Decision." The District argued that the court's factual findings were sufficient to compel judgment in the District's favor: "Under the HSAA's true liability standard, the factual findings in this Court's Statement of Decision establish that Defendants are jointly and severally liable for the District's 'removal and remedial action costs.'" The District did not identify any allegedly omitted or ambiguous factual findings; it simply requested that the court use its existing factual findings to hold defendants liable under the HSAA. This filing was therefore insufficient to prevent application of the doctrine of implied findings.

The District's second filing, entitled "Plaintiff's Objections to Defendants' Statement of Decision [Proposed]," was submitted prior to the court's statement of decision. As such, it could not have identified omissions or ambiguities in the statement of decision. For this reason alone, it is insufficient. (See *Fladboe, supra*, 150 Cal.App.4th at pp. 59-60.) Even setting that insufficiency aside, the District's second filing also did not identify material factual omissions or ambiguities the court must resolve. Instead, it reargued the evidence presented at trial in an effort to persuade the court (contrary to its tentative decision) to find the defendants liable under the HSAA. Simply arguing the District's own view of the evidence is insufficient; the District must identify material omissions or ambiguities in the ultimate factual findings necessary to resolve the issues contested at trial.

Because the District failed to properly object to omissions or ambiguities in the statement of decision, the doctrine of implied findings applies. We will therefore imply any factual findings necessary to support the judgment, and the trial court's alleged failure to include a material factual finding in its statement of decision is not reversible error.

e. Review and Prejudice

The court's statement of decision is not insulated from review, however. We may still review the court's factual findings, including any implied findings, for substantial evidence. (*Fladboe, supra*, 150 Cal.App.4th at p. 60 ["The appellate court then reviews the implied factual findings under the substantial evidence standard."]; see *Ermoian, supra*, 152 Cal.App.4th at p. 494.) And, of course, we still review the court's

interpretation of the law under a de novo standard of review. (*Central Valley, supra*, 162 Cal.App.4th at p. 513.)

Here, with limited exceptions, the District does not challenge the sufficiency of the evidence supporting the court's factual findings. Instead, as we have explained, the District challenges the court's interpretation of the legal element of causation under the HSAA.²⁹ We have determined the trial court misapplied the standard. In order to obtain reversal, the District must show the error was prejudicial, i.e., there is a reasonable probability the District would have obtained a more favorable result if the court had applied the correct standard. (See, e.g., *Perez v. VAS S.p.A.* (2010) 188 Cal.App.4th 658, 676, 679.)

We have reviewed the evidence presented at trial, the trial court's detailed statement of decision, and the parties' arguments on appeal. In the following parts, we will consider in detail the question of prejudice as to each defendant. In summary, however, our conclusions are as follows: As to Alcoa and CBS, the court explicitly found that VOC releases at those defendants' sites—regardless of their source—did not affect the shallow aquifer. These factual findings were based on the trial court's

²⁹ In its briefing, the District explained that it "will be focusing primarily on errors of law, such as the trial court's improper standard of causation, which are reviewed *de novo*." In some instances, the District makes explicit substantial evidence arguments, which we will address below. To the extent the District contends the evidence did not support the trial court's judgment more broadly, however, the District has waived this contention because it discusses primarily evidence favorable to its position in its opening brief, rather than all evidence relevant to the court's judgment. (*Foreman & Clark Corp. v. Fallon* (1971) 3 Cal.3d 875, 881; *Pope v. Babick* (2014) 229 Cal.App.4th 1238, 1246.) For example, the District largely omits any discussion of unfavorable testimony from defendants' experts on the issue of causation.

credibility determinations at trial, and there is no reasonable probability the trial court would have changed its evaluation of this evidence had it not misapplied the causation standard under the HSAA. As to Arnold and Crucible, such findings may be implied, and our review of the court's express findings and the evidence reveal no reasonable probability the court would have found the District carried its burden to show that VOC releases at the Arnold and Crucible sites affected the shallow aquifer. Because the District's response costs rely primarily on shallow aquifer contamination (with some exceptions we will explain below), the trial court's finding of no contamination precludes causation under the correct HSAA standard for Alcoa, Arnold, CBS, and Crucible. The trial court's error did not prejudice the District as to those defendants, and the court's judgment on the District's HSAA claim will be affirmed as to them.

However, as to Northrop's sites, the trial court expressly found that VOC contamination had affected the shallow aquifer. For reasons we will explain, therefore, the trial court's error was prejudicial to some extent as to Northrop on the element of causation. As noted, however, we must review the alternate grounds supporting the trial court's judgment in favor of Northrop to determine whether the court's causation error as to Northrop ultimately requires reversal of the judgment.

Alcoa

At the Alcoa site, as with all of defendants' sites, the trial court found there had been one or more releases of hazardous substances (i.e., VOC's). The court determined, however, that any VOC releases at the Alcoa site did not reach the shallow aquifer. "No VOC's of any kind were detected at [the Alcoa site] in the main soil borings between the

water table and a point approximately 30 feet above the water table. . . . [Alcoa's] expert, Richard Weiss, testified without contradiction that if VOC's passed through the soil column underneath [the Alcoa site] and into the shallow aquifer, there would have been detectable amounts of VOC's in the lower soil." The court found that thick layers of clay under the Alcoa site "discouraged migration of VOC's from the soil to the shallow aquifer." While the groundwater under the Alcoa site was contaminated with VOC's, the court concluded based on the evidence that "VOC contamination (both PCE and TCE) in the shallow aquifer under [the Alcoa site] came from one or more upgradient facilities."

These factual findings do not focus on releases by Alcoa itself or Alcoa's potential responsibility for the entire NBGPP. Instead, they focus on whether releases of hazardous substances *at the Alcoa site* caused shallow aquifer contamination and therefore the District's response costs. As such, the court's factual findings mirror the correct standard of causation under CERCLA and the HSAA. The past response costs claimed by the District are the District's construction of two extraction wells to capture contaminated water from the shallow aquifer for treatment. Because the Alcoa site did not contribute to shallow aquifer contamination, according to the findings of the trial court, it could not have caused these response costs.³⁰

³⁰ The District also claims that it "incurred response costs constructing monitoring wells to evaluate contamination from the [Alcoa] site." To support this assertion, the District cites only the testimony of its expert witness Waddell, who stated that a District monitoring well "on the eastside of the Chicago Musical site" provided data that he used in his evaluation of the Alcoa site. This testimony does not relate to causation at all. Nowhere does Waddell testify that releases at the Alcoa site *caused* the District to install the monitoring well in question. Given the trial court's factual determination that releases

Relying on *Monsanto, supra*, 858 F.2d at page 169, the District criticizes the court's factual findings. The District's reliance on *Monsanto* is unpersuasive for reasons we have already discussed. The District also argues it was required only to show a "plausible migration pathway" to the shallow aquifer, not actual migration, to establish causation. Although the District could potentially establish its prima facie case (or "satisf[y] its burden," as the District argues) by showing a plausible migration pathway, rather than actual migration (see, e.g., *Castaic Lake, supra*, 272 F.Supp.2d at p. 1066), the issue in this appeal is not whether the District can establish a prima facie case. Nor is the issue what conclusions this court would have reached if we had considered the evidence in the first instance as the trier of fact. Instead, the issue is whether the court's factual finding, after it weighed the District's evidence against contrary evidence, was affected by the court's use of an incorrect causation standard. Based on our review of the evidence and the trial court's findings, we conclude there is no reasonable probability this factual finding would have been altered if the trial court had used the correct standard. The District has not shown prejudice.

Arnold

As to the Arnold site, the trial court recognized that 1,1,1-TCA and 1,1-DCE had been found in the shallow soil. With respect to these contaminants, the court focused on whether *Arnold* was responsible for these VOC releases, which is the incorrect causation standard under CERCLA and the HSAA: "[T]here is insufficient evidence to find that

at the Alcoa site did not cause shallow aquifer contamination at all, the District has not shown there is a reasonable probability the trial court would have found that those releases caused its claimed investigatory costs.

the 1,1,1-TCA or 1,1-DCE found in shallow soil vapor on the [Arnold site] originated from Arnold. Without a foundation for the opinion that Arnold released 1,1,1-TCA into the soil (which would have eventually broken down to some extent to 1,1-DCE), there is no basis for Dr. Waddell's opinion that Arnold's operations contaminated groundwater or threaten today to contaminate groundwater."

The court's statement of decision did not make any express findings regarding the dispositive causation issue, i.e., whether any VOC releases at the Arnold site—from Arnold or another source—had caused shallow aquifer contamination and therefore the District's response costs. While we will imply such a finding to support the judgment, we must nonetheless consider whether it would have been affected by the trial court's use of an incorrect causation standard.³¹

³¹ By contrast, the court found that *PCE* contamination at the Arnold site did not impact groundwater, based on admissions by the District's expert witness Waddell. This finding conforms to the correct causation standard under the HSAA. And, with respect to *TCE*, the court found that Arnold did not use that chemical at all. The District argues that the evidence does not support the court's finding regarding TCE. We disagree. The District had the burden of proof on this issue. The District's evidence of Arnold's TCE use consisted of (1) testimony by an Arnold employee, Daniel Hopen, who recalled such use but was not confident and (2) TCE contamination in the shallow soil based on soil samples taken two decades after Arnold left the site. Arnold's evidence in opposition consisted of (1) testimony by a Arnold maintenance manager who was aware only of 1,1,1-TCA use over the entire time of Arnold's operations and (2) various permits and reports from the second half of Arnold's tenancy at the site that do not reference TCE (but in some cases do reference 1,1,1-TCA). Given the District's weak evidence, and the conflicting evidence offered by Arnold, the trial court could reasonably find that the District had not carried its burden of showing that Arnold used TCE. While we may have come to an opposite conclusion had we considered this issue in the first instance, our standard of review precludes second-guessing the trial court in this manner. Given this finding, even if the District had proven that a TCE release at the site had impacted groundwater and caused response costs, the District's HSAA claim would nonetheless fail

The evidence bearing on causation was disputed at trial. Waddell analyzed monitoring well data and grab samples from the shallow aquifer and concluded that the Arnold site contributed TCE and 1,1-DCE contamination to the shallow aquifer. Arnold's expert disagreed. He testified that the available data was insufficient to prove that the Arnold site contributed TCE to groundwater. Although 1,1-DCE was found in the shallow soil at the Arnold site, its presence in deeper samples was limited. Waddell himself admitted that the available data was inadequate to fully characterize the VOC contamination at the Arnold site because most sampling occurred at shallow depths and the sampling at deeper levels was sparse. And, while groundwater data was available at adjacent sites, there was no groundwater data for the Arnold site itself.

The District's claimed response costs consisted solely of an extraction well designed to remediate groundwater contamination flowing from the Arnold site (among others). A finding of causation therefore requires proof that the Arnold site caused groundwater contamination. Based on our review of the evidence, and cognizant of the trial court's findings regarding Waddell's lack of credibility, we conclude there is no reasonable probability the court would have found the District carried its burden to establish the essential fact of groundwater contamination had it understood the correct causation standard under CERCLA and HSAA. As to Arnold, therefore, the District has not shown prejudice.

because Arnold cannot be a responsible party for a hazardous substance it did not "dispose[] of." (See 42 U.S.C. § 9607(a)(2).)

CBS

As to CBS, the trial court recognized there had been VOC contamination in the shallow soil at 500 South Raymond and 1300 East Valencia, the latter of which was partially subdivided into 700 Sally Place. The court found, however, VOC releases at those sites had not resulted in actual or threatened contamination of the shallow aquifer. These factual findings avoid the legal errors we have identified and therefore provide strong evidence the District was not prejudiced by the errors.

For 500 South Raymond, the court concluded, "To the extent that shallow soil releases of PCE at 500 South Raymond are attributable to CBS, such releases have not impacted groundwater and do not pose a present or future threat to groundwater." Although couched as an unnecessary caveat, the trial court's attribution of any releases at the site to CBS actually conforms its finding to the correct causation standard. By concluding that any PCE releases at the 500 South Raymond site did not impact groundwater (or threaten to do so), the court applied the correct causation standard and made a dispositive factual finding on that issue.

Likewise, for the 1300 East Valencia site, the trial court credited the evidence that any VOC releases at the site did not impact groundwater or threaten to do so. Prominent among this evidence was Waddell's admission, supported by testing data, that a gap existed in PCE detections between the shallow soil and the shallow aquifer. This gap showed that contamination in the shallow soil had not reached the shallow aquifer and therefore could not have contaminated it. Again, these findings bear directly on the correct causation standard.

The District contends the trial court's factual findings reflect the oft-criticized "fingerprinting" or "tracing" requirement. (See *Asarco, supra*, 106 F.Supp.3d at p. 1031.) Not so. The cited conclusions of the trial court properly focused on whether contamination at the sites in question had caused the District's response costs. The District's claimed response costs were limited to the installation of extraction wells to treat contamination in the shallow aquifer, so it was appropriate for the trial court to consider whether there was any causal connection between contamination at the CBS sites and such costs. Again, while the District may have established a prima facie case by showing shallow aquifer contamination and a plausible migration pathway from the shallow soil to the shallow aquifer, the trial court was entitled to credit CBS's contrary evidence. And, in any event, the trial court made clear it did not believe the District's evidence for reasons entirely unrelated to the causation standard at issue in this appeal: "Accordingly, since much of Dr. Waddell's testimony did not comport with the facts presented at trial, lacked foundation, in some cases contained material mis[]statements, and was otherwise founded on speculation, particularly, as it related to causation, the Court does not credit his opinions regarding CBS'[s] alleged liability." Based on our review of the evidence and the court's findings, there is no reasonable probability the court would have found for the District on the issue of causation even if the court had used the correct causation standard. The District has not shown prejudice.

Crucible

As to Crucible, the trial court acknowledged that soil vapor sampling in 2003 showed VOC contamination in the shallow soil at the Crucible site. The deepest samples,

however, were at 40 feet below the surface, and these samples did not detect any VOC's. The court credited the conclusion of the consultant who conducted the sampling that "the low concentrations of VOC's[,] where present beneath the Site, do not present a threat to human health or groundwater beneath the Site." The court found Waddell's opinions, and the District's causation evidence, unpersuasive.

Although the trial court did not make an explicit causation finding for the Crucible site that corresponds to the correct causation standard, we nonetheless conclude the trial court's use of an incorrect causation standard was harmless. The court's factual findings regarding the nature and extent of VOC contamination of the site, its rejection of the District's evidence, and the state of the evidence generally show that it is not reasonably probable that the court would not have found in the District's favor on causation even if it had used the correct causation standard. As with Arnold and CBS, the District's claimed response costs were limited to extraction wells designed to treat the shallow aquifer. The court's findings make clear it did not believe the contamination at the Crucible site contaminated or threatened to contaminate that aquifer. The District's focus on contrary evidence, which the court did not credit, is unpersuasive. Even if the District's evidence did establish a prima facie case (by showing a plausible migration pathway or otherwise), that is not the issue in this appeal. The District has not shown prejudice.

Northrop

For Northrop, unlike the other defendants, the trial court found that releases at its sites had contaminated the shallow aquifer. For two of Northrop's sites, EMD and Kester Solder, the court's conclusion that those sites had not caused the District's response costs

rested on the court's factual findings that those sites no longer contributed to shallow aquifer contamination. For the third site, Y-12, the court's conclusion rested on Northrop's ongoing remediation of the site. For reasons we will explain, we conclude there is a reasonable probability the trial court would have found that the District had proved causation as to Northrop's Kester Solder and Y-12 sites had it used the correct causation standards.

The trial court found that TCE and 1,1,1-TCA were released at Northrop's EMD site. The court described Northrop's remediation activities, including soil vapor extraction and soil excavation to a depth 40 feet below the surface. The court cited the RWQCB's 1991 assessment, following Northrop's remediation, that "VOC's present in the soil have apparently not significantly impacted water quality." The court also cited the RWQCB's 1993 assessment, which concluded that "'contaminants in groundwater beneath the site probably originate from an off-site source.'" Later testing in 2010 by the District, the court concluded, showed "there is no perceptible contribution from the EMD site to groundwater contamination as groundwater passes below EMD." The testing "refute[d] the notion that past releases at EMD have caused the District to engage in any remedial action." The court noted Waddell's admission that contamination caused by EMD in the past will not be captured by the District's extraction wells. Instead, the wells "will capture only water that is either currently passing through EMD or will soon be passing through EMD." The court concluded that "[t]he District's evidence concerning shallow aquifer contamination or the threat thereof attributable to Northrop's EMD site was not persuasive."

At the Kester Solder site, the trial court found that PCE had been released. Initial testing revealed PCE contamination in the shallow soil, perched groundwater, and shallow aquifer. The court noted that, beginning in 2007, Northrop engaged in an RWQCB-approved remediation plan, including a soil vapor extraction process that yielded 1,000 pounds of VOC's. The court concluded that Northrop's remediation "remove[d] the source of potential groundwater contamination." While the court acknowledged that contamination remained in the perched groundwater at the site, Northrop was continuing its remediation efforts under the auspices of the RWQCB. Reviewing the expert testimony, the court rejected Waddell's opinion that the site remained a source of contamination. Instead, the court credited the testimony of Northrop's expert witness Glenn Tofani, who compared upgradient and downgradient monitoring well data to determine that the site did not contribute to shallow aquifer contamination. And, in the court's view, even if the site contributed to such contamination, it would be remediated by the downgradient treatment well at Northrop's Y-12 site. Weighing the evidence, the court concluded, "Kester [Solder] is no longer a source of further PCE contamination and as a result of soil remediation, is not contributing to PCE contamination in the shallow aquifer. The [RWQCB] is properly exercising its jurisdiction over Northrop's remediation efforts at this site. The Court therefore finds that Kester [Solder] does not pose a threat to groundwater and has not caused the need for the NBGPP."

At the Y-12 site, the trial court found that TCE had been released and impacted groundwater. PCE was also found at the site, but the trial court determined that it was

not a source of groundwater contamination. As with the EMD and Kester Solder sites, Northrop undertook an RWQCB-approved remediation effort. The trial court found that the effort had removed approximately 98 percent of VOC's at the Y-12 site (approximately 20,000 pounds). The trial court credited testimony predicting that remediation of the soil and perched groundwater would be completed by 2014 (two years after trial), at which point the Y-12 site would "no longer be a source of groundwater contamination." The trial court noted that Northrop had also installed a treatment well at Y-12, which was remediating groundwater to drinking water standards. Given this evidence, the court concluded as follows: "The evidence establishes that the NBGPP is not necessary to address Y-12 contamination because the source of the contamination at Y-12 is in the process of remediation under a responsible agency. . . . Accordingly, the Court concludes that Y-12 is being adequately remediated and that contamination at the site has not caused, and will not cause, the District to incur remedial action costs."

The court's statement of decision does not make a distinction between potential contamination at Northrop's sites (the correct causation standard) and potential contamination by Northrop itself (the incorrect causation standard). It simply focuses on the sites themselves. To that extent, the trial court's use of an incorrect standard does not appear to have been prejudicial. The District's assertions regarding its ability to show a "plausible migration pathway" or establish a prima face case are unpersuasive for reasons we have already stated.

But given the undisputed fact that Northrop's sites caused some VOC contamination in the shallow aquifer, we conclude the District has shown prejudice

stemming from the court's erroneous belief that the District was required to show hazardous substance releases at defendants' sites were a substantial factor in causing the District to develop the *entire* NBGPP, rather than simply a substantial factor in causing the District to incur some response costs.

For the Northrop sites, the District's claimed response costs include the construction of two extraction wells to treat contamination in the shallow aquifer and several monitoring wells to evaluate contamination flowing from Northrop's sites. Based on the trial court's findings that the EMD site no longer contributes to shallow aquifer contamination, and that any past contamination has already flowed beyond the District's extraction well, it is not reasonably probable the court would have found that releases at the EMD site caused the construction of the extraction wells if it had not misapplied the causation standard. For the Kester Solder and Y-12 sites, however, it is reasonably probable the trial court would have changed its conclusion. Although the trial court found the Kester Solder site no longer contributed to contamination in the shallow aquifer, it made no findings regarding the ability of the District's extraction wells to remediate past contamination. (Northrop does not appear to have introduced evidence that past contamination from Kester Solder had already flowed beyond the District's extraction wells, as it did with the EMD site.) And the Y-12 site continued to contribute to contamination the shallow aquifer at the time of trial. Northrop's expert Tofani admitted that its recirculation well did not capture all of the contamination flowing from the site. Like the Kester Solder site, the trial court made no findings regarding the ability of the District's extraction wells to remediate past (or present) contamination flowing

from the Y-12 site. While not certain, it appears reasonably probable that the court would have found that contamination from Y-12 caused the District to construct an extraction well to treat that contamination. It therefore may have found in the District's favor on the issue of causation if it had understood the District needed merely to prove that releases at the Kester Solder or Y-12 sites caused some response costs, rather than believing that releases at the sites had to cause the entire NBGPP project. The District has shown prejudice as to these extraction well costs and the Kester Solder and Y-12 sites.³²

³² In its briefing, Northrop claims, "Lambie also testified that any VOC's historically released at Northrop's Y-12 or upgradient Kester [Solder] site will not reach any proposed extraction wells as a result of the installation and operation of Northrop's groundwater treatment well." Northrop overstates Lambie's testimony. Lambie testified that he gave Northrop credit for its remediation activities, including its recirculation well, that reduced its share of the VOC contamination that would reach the shallow and principal aquifers. In explaining the credit, Lambie stated, "I reduced their share of chemicals going to the District-proposed recirculation system by virtue of the fact that their chemicals will not continue to arrive there. I would submit that what they have contributed to the aquifer in the past has already reached the area that the District's proposed recirculation system will remove. But that the recirculation well is sufficient to control any migration or contribution ongoing from Kester Solder to the shallow aquifer." The focus of Lambie's analysis was Northrop's contribution to VOC contamination in the aquifer system, not Northrop's contribution to contamination actually captured by the District's extraction wells. As mentioned above (see fn. 15, *ante*), Lambie believed the former analysis results in a more equitable allocation of responsibility and cost. Given Lambie's focus, our interpretation of his testimony is that Northrop's remediation activities resulted in a net zero contribution of VOC contamination in the aquifer system and the NBGPP's treatment area after those activities were fully implemented. Lambie did not opine on the potential for the NBGPP to treat past VOC contamination caused by Northrop's sites or the ongoing contamination caused by the Y-12 site that was not treated by Northrop's recirculation well. We note that while Northrop's remediation of contamination from non-Northrop sites may have some relevance to cost allocation under Lambie's methodology, it cannot prevent a finding of causation as to the Northrop contamination that escapes remediation.

The fact that Northrop offered contradictory expert testimony from Tofani and Lambie regarding whether contamination from its sites would be part of the NBGPP's treatment area (see fn. 15, *ante*) further supports our finding of prejudice as to the Kester Solder and Y-12 sites. Contrary to the District's contention, however, such testimony does not establish prejudice as to the EMD site. The trial court weighed the conflicting expert testimony and credited Tofani's opinion that the EMD site no longer contributed to shallow aquifer contamination and Waddell's admission that past contamination had already flowed past the District's extraction wells. The District appears to challenge the former testimony, arguing it cannot constitute substantial evidence because Tofani allegedly did not consider all of the factors Lambie considered. (See *Pacific Gas & Electric Co. v. Zuckerman* (1987) 189 Cal.App.3d 1113, 1136 ["When a trial court has accepted an expert's ultimate conclusion without critical consideration of his reasoning, and it appears the conclusion was based upon improper or unwarranted matters, then the judgment must be reversed for lack of substantial evidence."].) The fact that two experts disagreed on the factors used in their analysis under the circumstances here, however, does not mean one expert's conclusion was based on "improper or unwarranted matters," such that his conclusion was not substantial evidence. At most, the District has shown only run-of-the-mill disagreement between experts, which the trial court was entitled to resolve against the District. (See, e.g., *People v. Poe* (1999) 74 Cal.App.4th 826, 831.) Substantial evidence therefore supported the trial court's finding, and we may not reweigh this factual finding on appeal. It also does not appear reasonably probable the trial court

would have come to a different conclusion if it had not misperceived the causation standard under the HSAA. The court's legal errors have no bearing on this factual issue.

The District also claimed investigatory costs consisting of monitoring wells in the vicinity of the EMD and Kester Solder sites. With one exception, the District does not explain how hazardous substance releases at those sites caused the District to construct those monitoring wells. Instead, the evidence cited by the District shows only that it used data from those monitoring wells to analyze releases at those sites. That evidence does not bear on the issue of causation. As to one well, however, the District cites evidence that it constructed the well specifically to evaluate shallow aquifer contamination at the Kester Solder site. Given that evidence, it is reasonably probable the trial court would have found that releases at the Kester Solder site caused these investigatory costs if it had not believed that such releases were required to cause the entire NBGPP. The District has therefore shown prejudice as to these costs related to the Kester Solder site as well.

2. Response Costs: Whether the District Is a "State"

We will next consider the additional grounds supporting the judgment against the District on its HSAA claim. The trial court found, in the alternative, that the District could not recover on its HSAA claim because it had not shown its response costs were (1) necessary and (2) consistent with the NCP. (See *Carson Harbor I, supra*, 270 F.3d at pp. 870-871; see 42 U.S.C. § 9607(a)(4)(B).) The District contends the trial court erred by imposing these requirements because it is a "State" under CERCLA and a different CERCLA provision applies. As we will explain, we disagree that the District is a "State"

for purposes of CERCLA's cost recovery provisions. The court therefore did not err by imposing these requirements.

Under CERCLA, States (as well as Indian tribes and the federal government) can recover "all costs of removal or remedial action . . . not inconsistent with the [NCP]." (42 U.S.C. § 9607(a)(4)(A).) States, Indian tribes, and the federal government therefore enjoy a presumption that their costs are NCP-compliant, which is not extended to other cost recovery plaintiffs. (*Washington State Department of Transportation v. Washington Natural Gas Co.* (9th Cir. 1995) 59 F.3d 793, 799-800 (*WSDOT*).) "HSAA incorporates the NCP standard by reference." (*Fireman's Fund Insurance Co. v. City of Lodi* (9th Cir. 2002) 302 F.3d 928, 950 (*Fireman's Fund*).) The District's contention presents a question of statutory interpretation, which we review de novo. (*Shamrock Foods Co., supra*, 24 Cal.4th at p. 432; *Central Valley, supra*, 162 Cal.App.4th at p. 513.)

Under CERCLA, "[t]he terms 'United States' and 'State' include the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Commonwealth of the Northern Marianas, and any other territory or possession over which the United States has jurisdiction." (42 U.S.C. § 9601(27).) "This definition does not explain what constitutes each of the 'several States of the United States.' A more detailed statutory definition was unnecessary because the plain meaning of 'State' is the organized government acting on behalf of the citizens of the state." (*WSDOT, supra*, 59 F.3d at p. 800.) "The organized government of a state includes state administrative departments and agencies. A 'state agency' is '[a] department, commission, board, committee, or body of any form operating

as an instrumentality of the state government.' " (*Ibid.*) For example, as a State agency, the DTSC falls within CERCLA's definition of a State. (*Fireman's Fund, supra*, 302 F.3d at p. 950.)

CERCLA's definitions distinguish States from other, subsidiary political units. In its definition of a "person," in addition to various private parties, CERCLA includes "United States Government, State, municipality, commission, political subdivision of a State, or any interstate body." (42 U.S.C. § 9601(21).) Under well-settled canons of statutory interpretation, these subsidiary political units (municipalities and political subdivisions of a State) are not States under CERCLA because they are listed separately. To equate them with States would render their separate listing superfluous. (See, e.g., *Dyna-Med, Inc. v. Fair Employment & Housing Commission* (1987) 43 Cal.3d 1379, 1387 ["A construction making some words surplusage is to be avoided."]; see also Civ. Code, § 3541.) "A municipality, a local government with authority over a limited area, is a different type of government unit than a state-wide agency that is part of the organized government of the state itself." (*WSDOT, supra*, 59 F.3d at p. 800, fn. 5; see *United States ex rel. Norton Sound Health Corp. v. Bering Strait School Dist.* (9th Cir. 1998) 138 F.3d 1281, 1284 ["In short, a local government unit, though established under state law, funded by the state, and ultimately under state control, with jurisdiction over only a limited area, is not a 'State.' "].)

Reviewing federal court decisions distinguishing States from subsidiary political units, one court summarized, "The courts explain that CERCLA's definition of 'state' does not include political subdivisions such as municipalities and the entities included under

the definition differ substantially from political subdivisions in terms of their authority and power. All are sovereigns and, unlike municipalities, do not depend on states for their authority to govern. The courts further note that 'municipalities' and other 'political subdivision[s]' are included within the statutory definition of 'person.' " (*Town of New Windsor v. Tesa Truck, Inc.* (S.D.N.Y. 1996) 919 F.Supp. 662, 683.)

Numerous other federal district courts agree that municipalities and other political subdivisions are not States for purposes of CERCLA cost recovery actions. (See, e.g., *Miami-Dade County v. United States* (S.D.Fla. 2004) 345 F.Supp.2d 1319, 1334 ["By the clear language of CERCLA, the County, as a 'political subdivision of a state,' is not entitled to the presumption that response actions taken were necessary and consistent with the NCP, to which States and the Federal government are entitled."]; *City of New York v. Chemical Waste Disposal Corp.* (E.D.N.Y. 1993) 836 F.Supp. 968, 977 ["By its terms, CERCLA's definition of 'state' does not include political subdivisions such as municipalities."]; *Sherwin-Williams Co. v. City of Hamtramck* (E.D.Mich. 1993) 840 F.Supp. 470, 474-475 (*Sherwin Williams*); *City of Heath v. Ashland Oil, Inc.* (S.D.Ohio 1993) 834 F.Supp. 971, 976-977; *Town of Bedford v. Raytheon Co.* (D.Mass. 1991) 755 F.Supp. 469, 470-471; *City of Philadelphia v. Stepan Chemical Co.* (E.D.Pa. 1989) 713 F.Supp. 1484, 1486-1487; see also *Borough of Rockaway v. Klockner & Klocker* (D.N.J. 1993) 811 F.Supp. 1039, 1048-1049.)³³

³³ The District cites three federal district court opinions that adhere to the contrary view that municipalities should be considered States in CERCLA cost recovery actions. (See, e.g., *City of New York v. Exxon Corp.* (S.D.N.Y. 1990) 112 B.R. 540, 545; *City of*

The District was established by an act of the California Legislature. (OCWD Act, § 1, subd. (a).) It has powers over a limited sphere, groundwater, and within a limited geographic area, roughly corresponding to Orange County. (*Id.*, §§ 1, subd. (a), 2.) It has no statewide authority in subject matter or geography. It is therefore a political subdivision of the State, not a State itself. It is akin to a municipality, but with more specialized powers.

It appears only one court has considered whether a California water district is a State under CERCLA. (See *Santa Clara Valley Water District v. Olin Corp.* (N.D.Cal. Sept. 28, 2007, No. C-07-03756) 2007 WL 2890390 (SCVWD).) That federal district court held, in an unpublished opinion, that the district in question was not a State because

New York v. Exxon Corp. (S.D.N.Y. 1988) 697 F.Supp. 677, 683-686; *Arizona v. Motorola, Inc.* (D. Ariz. Sept. 1, 1992, No. CIV 89-1700) 1992 U.S. Dist. LEXIS 22799, *14-*17.) It appears that these cases represent the minority view of the federal district courts, and we find them unpersuasive for reasons we have already discussed. The District also relies on two opinions that construe other CERCLA provisions. (*Carolina Casualty Insurance Co. v. Oahu Air Conditioning Service, Inc.* (E.D.Cal. 2014) 994 F.Supp.2d 1082, 1087, fn. 2 (*Carolina Casualty*) [construing CERCLA's contribution cause of action, 42 U.S.C. § 9613(f)]; *Unigard Insurance Co. v. City of Lodi* (E.D.Cal. Mar. 5, 1999, No. Civ. S98-1712) 1999 WL 33454809, *4-*5 (*Unigard*) [construing CERCLA's savings provision against federal preemption, 42 U.S.C. 9614(a)].) Neither opinion engaged in a textual analysis of CERCLA's distinction between States and their political subdivisions in its definition of "person." And, unlike the CERCLA provisions at issue in those opinions, the CERCLA provision here makes an explicit distinction between States and "other person[s]." (42 U.S.C. § 9607(a)(4)(A)-(B).) For these reasons, *Unigard* and *Carolina Casualty* are unpersuasive. We note additionally that these opinions appear to have relied on the policies behind the CERCLA provisions at issue to include political subdivisions within the term States. We will consider the policy considerations implicated by the use of the term in CERCLA's cost recovery provisions below.

it did not have statewide authority. (*Id.* at p. *5.) We agree with the district court's reasoning and conclusion.³⁴

The District points out that its claim is under the HSAA, not CERCLA, and therefore we should consider policy reasons specific to California why the District should enjoy the presumption afforded to States under CERCLA. The District argues that the cost recovery provisions of the OCWD Act, which reflect a presumption that the District's costs are reasonable and necessary (OCWD Act, § 8, subd. (c)), show that the District should enjoy a similar presumption under CERCLA and the HSAA. We note first that, absent absurd or unintended results, such policy considerations cannot override the plain meaning of the statute. (See *California School Employees Assn. v. Governing Board* (1994) 8 Cal.4th 333, 340 (*California School Employees*)). And, to the extent we can discern a policy thread connecting these various concepts, it does not favor the District's position.

The HSAA itself places NCP compliance at the heart of environmental remediation actions in California. (Health & Saf. Code, §§ 25350, 25356.1, subd. (d).) It also entrusts the State of California's overall environmental investigation and remediation efforts to two state agencies, the DTSC and the RWQCB. (See, e.g., *id.*, §§ 25356.1, subd. (b), 25312.) The District is not included. The District's own governing act does

³⁴ The District attempts to distinguish *SCVWD* on the grounds that the water district at issue there, unlike the District, was not specifically empowered to perform environmental remediation. This difference, however, does not affect our textual analysis of the statute. And, for reasons we explain *post*, the District's environmental remediation powers do not make it a State under CERCLA.

not contemplate environmental investigation and remediation efforts on the scale of the DTSC and the RWQCB under the HSAA. Instead, it includes specific provisions relating to the District only. (OCWD Act, § 8.) (As we will discuss in part II, *post*, the OCWD Act's standards differ materially from the HSAA.) Given the District's exclusion from the HSAA, and the specific standards and provisions governing the District's environmental cleanup activities in the OCWD Act, we conclude that the applicable California policies support our conclusion that the District should not be considered a State under the cost recovery provisions of CERCLA and should not enjoy the presumption of NCP compliance.

The policies underlying CERCLA's cost recovery provisions likewise counsel against extending the NCP presumption to the District. As one court explained, with respect to the presumption enjoyed by States that their costs will be NCP compliant, "This standard of proof was designed in deference to the highly technical nature of environmental cleanup efforts, and the realization that the expertise of agencies charged with environmental protection should not be second-guessed by the courts." (*Commonwealth of Massachusetts v. Blackstone Valley Electric Co.* (D. Mass. 1994) 867 F.Supp. 78, 81.) Although CERCLA does not explicitly limit the presumption to agencies with special environmental experience (*WSDOT, supra*, 59 F.3d at p. 801), interpreting the term to include only statewide agencies that are part of a State's government ensures at least the opportunity for institutional specialization and broad-based coordination that would not exist if the term were extended to all municipalities and political subdivisions.

3. Response Costs: Necessity

Because it is not a State under CERCLA, the District must prove its response costs were necessary. (See 42 U.S.C. § 9607(a)(4)(B) [allowing recovery of "necessary costs of response"].)³⁵ The District argues the evidence does not support the trial court's finding that its response costs were not necessary, as that term is used in CERCLA. We agree.

"It is generally agreed that [the necessity] standard requires that an actual and real threat to human health or the environment exist before initiating a response action." (*Carson Harbor I, supra*, 270 F.3d at p. 871; see *City of Colton v. American Promotional Events, Inc.-West* (9th Cir. 2010) 614 F.3d 998, 1003 (*City of Colton*); *Regional Airport Authority of Louisville v. LFG, LLC* (6th Cir. 2006) 460 F.3d 697, 703 (*Louisville*).) "In determining whether response costs are 'necessary,' we focus not on whether a party has a business or other motive in cleaning up the property, but on whether there is a threat to human health or the environment and whether the response action is addressed to that threat." (*Carson Harbor I, supra*, 270 F.3d at p. 872.) Investigatory costs incurred "in order to assist with and help plan the eventual remediation and cleanup efforts" are necessary under CERCLA (*Walnut Creek Manor, LLC v. Mayhew Center, LLC* (N.D.Cal. 2009) 622 F.Supp.2d 918, 929) and "are recoverable even absent any subsequent

³⁵ Defendants claim the District was also required to show its costs were reasonable. But neither the HSAA nor CERCLA have an express requirement that costs be "reasonable." The concept is instead part of the requirement that costs be consistent with the NCP. We will consider defendants' criticisms in connection with that requirement.

recoverable response costs' " (*Yankee Gas Services Co. v. UGI Utilities, Inc.* (D. Conn. 2012) 852 F.Supp.2d 229, 242 (*Yankee Gas*)).

In its statement of decision, the trial court determined that "the NBGPP is unnecessary and unreasonable, thus precluding the District's recovery under . . . the HSAA." The court's determination rested on its finding that natural attenuation of VOC contaminants in the shallow aquifer was sufficient to protect drinking water supplies in the principal aquifer: "The court further finds, based on the weight of the evidence, that the NBGPP is not necessary either to protect the principal aquifer—the drinking water aquifer—or to remediate VOC contamination in the shallow (non-drinking water) aquifer to a goal of 5-10 times the [maximum contaminant level] for the various VOC's in order to provide future protection for the drinking water principal aquifer." And, with respect to Northrop's Y-12 site specifically, the court found that "[t]he evidence establishes that the NBGPP is not necessary to address Y-12 contamination because the source of contamination at Y-12 is in the process of remediation under a responsible agency."

As with all factual determinations, we review the trial court's determination that the District's response costs were not necessary for substantial evidence. (See *Central Valley, supra*, 162 Cal.App.4th at p. 513.) Viewing the record in the light most favorable to defendants, and in light of the standards articulated above, we conclude that the evidence did not support a finding that the District's response costs were not necessary. It was undisputed that groundwater in the North Basin area, including around defendants' sites, had been impacted by VOC contamination. The presence of VOC contamination at significant levels was a threat to human health and the environment. (See, e.g., *United*

Alloys, Inc. v. Baker (C.D.Cal. 2011) 797 F.Supp.2d 974, 996 [finding that VOC contamination in soil "pose[s] an actual and real threat to public health and the environment" and remediation costs are therefore "necessary" under CERCLA].) No reasonable trier of fact could find otherwise. It was also undisputed that the District's costs were addressed to the threat posed by VOC contamination. The District did not investigate VOC contamination or construct its extraction wells for some other reason.

The trial court focused on drinking water supplies, to the exclusion of other hazards to human health and the environment, such as VOC contamination in the shallow aquifer. The court also applied the term "necessary" in its strictest sense, i.e., the NBGPP was not necessary because other means existed to protect the deep aquifer. The court misinterpreted the standard of "necessity" under CERCLA and the HSAA and therefore erred.

Defendants offer a fusillade of criticism against the NBGPP generally, claiming it is not necessary to remediate VOC contamination in the North Basin because, for example, natural attenuation would be an acceptable alternative. But they do not tie their arguments to the applicable standard of necessity under CERCLA and the HSAA. Indeed, they do not reference the standard at all. The standard, properly understood, does not speak to the quality of the District's response action. It simply asks whether the response action is addressed to an actual threat to human health or the environment. Shortcomings in the development and overall design of the NBGPP do not, in and of themselves, bear strongly on this standard. Defendants' criticisms are more relevant to

the District's compliance with the NCP, and we will consider that issue in the next section.³⁶

4. *Response Costs: NCP Consistency*

Because the District is not a State under CERCLA, it must also prove its response costs are "consistent with" the NCP, including its requirements for meaningful public participation, cost-effectiveness, and adequate planning for any remedial action. (42 U.S.C. § 9607(a)(4)(B); see *Carson Harbor Village v. County of Los Angeles* (9th Cir. 2006) 433 F.3d 1260, 1265-1266 (*Carson Harbor II*.) For reasons we will explain, we conclude the District has not shown its claimed response costs were consistent with the NCP.

"The NCP 'specifies procedures for preparing and responding to contaminations and was promulgated by the Environmental Protection Agency (EPA) pursuant to CERCLA § 105 [42 U.S.C. § 9605].' [Citations.] 'It is designed to make the party seeking response costs choose a cost-effective course of action to protect public health and the environment.' " (*City of Colton, supra*, 614 F.3d at p. 1003.) A response action "will be considered 'consistent with the NCP' if the action, when evaluated as a whole, is in substantial compliance with the applicable requirements . . . , and results in a

³⁶ In its discussion of causation, Northrop contends its remediation efforts render the NBGPP unnecessary because it is not needed to remediate VOC contamination from Northrop's sites. Northrop cites various authorities interpreting the CERCLA necessity requirement. But, as the placement of Northrop's discussion shows, the specific relationship between contamination for which Northrop is responsible and the District's specific response costs is an issue of causation, not necessity, under the CERCLA and the HSAA. We have already addressed Northrop's arguments regarding causation in part I.C.1.e., *ante*.

CERCLA-quality cleanup." (40 C.F.R. § 300.700(c)(3)(i).) Mere "immaterial or insubstantial deviations" from applicable requirements are not sufficient to show that an action is not consistent with the NCP. (*Id.*, § 300.700(c)(4); see *Louisville, supra*, 460 F.3d at p. 707.)

In general, "[a] 'CERCLA-quality cleanup' is a response action that (1) protects human health and the environment, (2) utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, (3) is cost-effective, (4) satisfies Applicable and Relevant or Appropriate Requirements ('ARARS') for the site, and (5) provides opportunity for meaningful public participation." (*Franklin County Convention Facilities Authority v. American Premier Underwriters* (6th Cir. 2001) 240 F.3d 534, 543 (*Franklin County*).) The specific regulatory requirements identified by the NCP include protection of worker health and safety (40 C.F.R. § 300.150); adequate documentation of hazardous substance releases, responsible parties, response actions, and costs incurred (*id.*, § 300.160); identification of ARARS applicable to the hazardous substance release and response action (*id.*, § 300.400(g)); an adequate remedial site evaluation (*id.*, § 300.420); an NCP-compliant remedial investigation, feasibility study, and selection of remedy (*id.*, § 300.430); and subsequent remedial design and remedial action (*id.*, § 300.435). (See *id.*, § 300.700(c)(5).)

The regulations emphasize the role of public participation throughout the investigation, study, and remedial phases of an NCP-compliant response action: "Private parties undertaking response actions should provide an opportunity for public comment

concerning the selection of the response action based on [NCP requirements], or based on substantially equivalent state and local requirements." (40 C.F.R. § 300.700(c)(6).) The NCP requirements for public participation "are intended to promote active communication between communities affected by discharges or releases" and the party instituting the response action. (*Id.*, § 300.155(c).) The specific NCP requirements for public participation will be discussed in further detail below.

The District contends, as an initial matter, that the requirement of NCP consistency should not apply to investigatory costs. A number of federal authorities support the District's contention. (See *Village of Milford v. K-H Holding Corp.* (6th Cir. 2004) 390 F.3d 926, 934 ["[T]his court has held that consistency with the NCP is not required for recovery of *monitoring and investigation costs.*"] (*italics added*); *CNH America, LLC v. Champion Environmental Services* (E.D.Wis. 2012) 863 F.Supp.2d 793, 809 ["[M]any courts have held that initial investigation, site-assessment, and monitoring costs are recoverable under [42 U.S.C. § 9607(a)] irrespective of compliance with NCP requirements."].) Other authorities disagree. (See *Board of County Commissioners v. Brown Group Retail, Inc.* (D.Colo. 2011) 768 F.Supp.2d 1092, 1115; *Aviall Services, Inc. v. Cooper Industries, LLC* (N.D.Tex. 2008) 572 F.Supp.2d 676, 697 (*Aviall Services*).)

We agree with the latter line of authority and conclude the District must prove its investigatory costs are consistent with the NCP to recover. The plain language of the federal statute compels this result. "It is well-established that costs of investigation, assessment, or monitoring of potential environmental harm qualify as "costs of response" under CERCLA." [Citations.] And CERCLA plainly allows private parties to recover

only those 'costs of response' incurred 'consistent with the [NCP].' 42 U.S.C.

§ 9607(a)(4)(B). It would thus contravene the plain language of the statute to hold that investigatory costs are exempt from NCP compliance." (*Aviall Services, supra*, 572 F.Supp.2d at p. 697.)

Based on the nature of these costs, however, not all NCP requirements may be applicable when litigation commences. Because a plaintiff may seek cost recovery before a remediation action has been completed (*Wickland Oil Terminals v. Asarco, Inc.* (9th Cir. 1986) 792 F.2d 887, 892), consistency with the NCP in this context may not mean that *all* NCP requirements have been met. The NCP requirements applicable to a given remedy will depend on where in the development process the remedy is at the time of the plaintiff's cost recovery action.

One federal district court explained that " 'investigatory costs will be considered 'consistent with the NCP' where they are incurred consistently with the purpose of the NCP.' " (*Aviall Services, supra*, 572 F.Supp.2d at p. 697.) The key criterion, sometimes ignored in the federal authorities we have reviewed, is that costs must be *consistent* with the NCP. The plaintiff need not have *complied* with the NCP in its entirety to recover. (See *Yankee Gas, supra*, 852 F.Supp.2d at p. 242.) The trial court here did not err by requiring the District to show NCP consistency for its investigatory costs.

The District contends the court erred by finding its response costs were not consistent with the NCP. The federal courts view this issue as a mixed question of law and fact. "Whether a party has substantially complied with the NCP is a mixed question of law and fact. [Citation.] This means that, once the factual details regarding [the

District's] cleanup efforts have been established, the court decides—as a matter of law—whether those efforts substantially comply with the NCP." (*Aviall Services, supra*, 572 F.Supp.2d at p. 695.) We agree and will therefore review the trial court's factual findings for substantial evidence and review de novo the ultimate conclusion that the District's costs were not consistent with the NCP, i.e., that the District did not substantially comply with applicable NCP requirements. (See *Louisiana-Pacific Corp. v. ASARCO Inc.* (9th Cir. 1994) 24 F.3d 1565, 1576; see also *Board of Administration v. Wilson* (1997) 52 Cal.App.4th 1109, 1127-1130 [discussing mixed questions of law and fact under California law].)

At trial, the District claimed a total of approximately \$3.7 million in incurred response costs. This total included approximately \$876,000 in investigatory costs (e.g., monitoring wells), \$1.8 million in extraction well construction costs, and \$1 million in design and development costs (e.g., environmental impact analysis). On appeal, the District does not focus on the relationship between its specific incurred costs and the NCP. Instead, the District argues it substantially complied with the NCP in the course of its overall response to VOC contamination in the North Basin area. For reasons we will explain, we disagree.³⁷

³⁷ Because the District focuses on its overall response to VOC contamination in the North Basin area, and not any specific response costs, we need not consider whether any specific response costs were consistent with the NCP. The District's focus appears to be part of its effort to hold defendants liable for some part of its *future* costs related to the NBGPP, rather than its past incurred costs only.

A primary goal of the NCP is to ensure meaningful public participation in the selection of a response action. (See *Waste Management of Alameda County, Inc. v. East Bay Regional Park District* (N.D.Cal. 2001) 135 F.Supp.2d 1071, 1100 (*Waste Management*) [" '[M]eaningful public participation' is 'integral' to ensuring the proper completion of a CERCLA-quality cleanup."]; see also *Franklin County, supra*, 240 F.3d at p. 543.) "The public participation requirement has two main components. First, in developing a remedial action plan, prior to actual field work beginning, the party conducting the cleanup 'shall . . . to the extent practicable' interview local officials, community residents, or other interested or affected parties to learn their concerns. 40 C.F.R. § 300.430(c)(2)(i). Additionally, a formal community relations plan must be prepared to ensure an opportunity for public involvement, and at least one local 'information repository' must be established to make information available to the public about the site remediation. 40 C.F.R. § 300.430(c)(2)(ii). Second, after a remediation plan has been chosen, the party conducting the cleanup shall publish notice of the plan in a local newspaper, provide an opportunity for submission of comments on the proposed plan, provide an opportunity for a public meeting, make a transcript of the meeting available to the public, and prepare a written summary of significant comments and responses to those comments. 40 C.F.R. § 300.430(f)(3)." (*Carson Harbor II, supra*, 433 F.3d at p. 1266.)

The proposed plan must "[p]rovide a brief summary of the remedial alternatives evaluated" and "[i]dentify and provide a discussion of the rationale that supports the preferred alternative." (40 C.F.R. § 300.430(f)(2)(i)-(ii).) The evaluation must consider

nine criteria: overall protection of human health and the environment; compliance with ARARS; long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; cost; state acceptance; and community acceptance. (*Id.*, § 300.430(e)(9)(iii).) As part of the public comment process, the party conducting the cleanup must "[m]ake the proposed plan and supporting analysis and information available" (*id.*, § 300.430(f)(3)(i)(B)) and allow a comment period on the proposed plan of at least 30 days (*id.*, § 300.430(f)(3)(i)(C)).

The District did not follow these requirements during its development of the NBGPP. The District has not pointed to any evidence of community outreach when VOC contamination was first discovered, nor is there any evidence the District put together a community relations plan or a public information repository when it chose the NBGPP (and its precursors) as the treatment for VOC contamination in the North Basin area. The District instead discussed, considered, and approved various aspects of the NBGPP (and its precursors) during its regular board meetings over a period of more than 10 years. This circumstance resulted in a number of material deviations from the NCP requirements. The District provided only 72 hours' notice that the NBGPP (or its precursors) would be on the agenda of a District board meeting. The public therefore only had 72 hours—rather than 30 days—to review the proposed action, analyze any supporting material, and provide any comments. The District also materially changed the NBGPP (and its precursors) numerous times over the period of its development, and its projected cost increased from a maximum of approximately \$23 million to over \$200 million. The public was presented, in effect, with a moving target. Its ability to

meaningfully participate in the District's selection of a remedy was severely hampered. (See *Waste Management, supra*, 135 F.Supp.2d at pp. 1102-1103 [public participation requirement not met through piecemeal public hearings; "no one public meeting presented [the] proposal as a whole or presented an opportunity for meaningful public input into [the responding party's] consideration of remedial alternatives"].)

The District's efforts to comply with CEQA likewise do not substantially comply with the public participation requirements of the NCP. "CEQA is a comprehensive scheme designed to provide long-term protection to the environment." (*Mountain Lion Foundation v. Fish & Game Commission* (1997) 16 Cal.4th 105, 112.) The key requirement of CEQA is the preparation of an EIR for "any project that a public agency proposes to carry out or approve that may have a significant effect on the environment." (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 465 (*Ballona Wetlands*)). "An [EIR] is an informational document which, when its preparation is required . . . , shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an [EIR] is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project." (Pub. Resources Code, § 21061.) A public agency should not approve a proposed project under CEQA "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects" (*Id.*, § 21002.)

The formal disclosure requirements of CEQA and the NCP overlap, but they are not coextensive. We need not decide whether CEQA compliance could ever satisfy the NCP because it is apparent, based on the record before us here, that the District's disclosures under CEQA do not substantially comply with the NCP. The District's draft mitigated negative declaration contains only cursory information about that iteration of the NBGPP, without any meaningful discussion of the NCP's evaluation criteria or project alternatives. The draft mitigated negative declaration mentions a supporting initial study, but that study does not appear to be part of the record. The District's Draft SEIR provides further detail on the NBGPP as eventually approved and significant disclosure of its environmental effects. The Draft SEIR, however, falls short of the NCP's disclosure requirements. It assumed construction of the precursor to the NBGPP described in the District's late 2005 staff report; that was the "no project" alternative. The proposed alternatives in the Draft SEIR were that precursor and several variations, including the project as described in the District's 2005 mitigated negative declaration and the final NBGPP. The Draft SEIR did not consider an alternative where the District took no action, nor did it consider alternatives that did not build on the 2005 proposals. For this reason alone, the Draft SEIR did not substantially comply with the NCP.

Moreover, the Draft SEIR did not contain a meaningful summary of the District's evaluation of the NBGPP and its alternatives under the criteria specified by the NCP. For example, the Draft SEIR mentioned cost only in passing, by reference to the District's \$20.5 million capital budget approved six years earlier. The Draft SEIR did not disclose the NBGPP's then-current estimated cost, and it did not hint that the cost would soon

expand to \$200 million. The Draft SEIR also made no effort to put those costs in context or weigh the financial costs and benefits of the NBGPP or any alternative. Without a discussion of cost, or the cost of alternatives, the District's disclosures pursuant to CEQA cannot substantially satisfy the NCP's proposed plan requirements because they do not allow the public to meaningfully assess the District's proposed response action and its alternatives. In this appeal, the District makes no real effort to compare its CEQA disclosures to those required under the NCP. Its contention that the CEQA process satisfied the NCP's public participation requirements is therefore unpersuasive.

Based on the deficiencies we have identified, we conclude the District has not met its burden to show compliance with the NCP's public participation requirements. These deficiencies are neither technical nor de minimus departures from the NCP's requirements; they significantly impacted the public's ability to meaningfully participate in the selection of a remedy for VOC contamination in the North Basin. (See *Waste Management, supra*, 135 F.Supp.2d at p. 1103.)

"Courts have consistently held that failure by a party to provide for the required opportunity for public comment 'renders a remedial action inconsistent with the NCP and bars recovery of costs.' " (*Sherwin-Williams, supra*, 840 F.Supp. at p. 476.) We likewise conclude the District's failure to satisfy the NCP's public participation requirement bars recovery of its costs under the HSAA.³⁸

³⁸ The District contends its status as a public agency is evidence that the NCP's public participation requirement was satisfied. We disagree. The NCP governs response actions by public agencies and private parties alike. The specific public participation

A second primary goal of the NCP is to encourage cost-effective response actions. (See *Franklin County*, *supra*, 240 F.3d at p. 543.) The NCP requires cost to be considered in determining potential remedial actions, and excessive cost may be a ground to exclude a potential remedial action from further consideration. (40 C.F.R. § 300.430(e)(7)(iii).) The NCP also expressly requires that a proposed remedial action be "cost-effective," provided that it adequately protects human health and the environment. (*Id.*, § 300.430(f)(1)(ii)(D); see *State of New York v. Adamowicz* (E.D.N.Y. 2013) 932 F.Supp.2d 340, 344 ["Among other factors, to be 'consistent' with the NCP, remedial actions must be cost-effective."].)

"Cost-effectiveness is determined by evaluating the following three of the five balancing criteria noted in § 300.430(f)(1)(i)(B) to determine overall effectiveness: long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through

requirements of the NCP would have no meaning as applied to public agencies if their status as public agencies were sufficient to satisfy those requirements. Indeed, even the federal government and states must show their actions are "not inconsistent" with these requirements in order to prevail in a cost recovery action. (42 U.S.C. § 9607(a)(4)(A).) While the District's status as a public agency may, at the margins, make it more likely that its actions will substantially comply with the NCP's public participation requirements, the deficiencies we have identified outweigh any such benefit the District might receive in this regard. The District's reliance on *Bedford Affiliates*, *supra*, 156 F.3d 416 is unpersuasive. In that case, the court held that a statewide agency's approval of a private party's remediation action may obviate the need for formal public comment: "Where a state agency responsible for overseeing remediation of hazardous wastes gives comprehensive input, and the private parties involved act pursuant to those instructions, the state participation may fulfill the public participation requirement." (*Id.* at p. 428.) Here, there was no similar state involvement. And, in *Bedford Affiliates*, "none of the parties to the action dispute[d] the quality or cost of [plaintiff's] cleanup efforts," so "to preclude its recovery solely because of the lack of public comment" would have been unjust. (*Id.* at p. 429.) By contrast here, the parties certainly dispute the quality and cost of the NBGPP.

treatment, and short-term effectiveness. Overall effectiveness is then compared to cost to ensure that the remedy is cost-effective. A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (40 C.F.R. § 300.430(f)(1)(ii)(D); see *Franklin County, supra*, 240 F.3d at p. 546.) A remedial action need not be the least expensive alternative to be cost-effective. (*Basic Management Inc. v. United States* (D. Nev. 2008) 569 F.Supp.2d 1106, 1121.)

The trial court found that the NBGPP, as envisioned at the time of trial, was not cost-effective. In late 2005, District staff performed a cost-benefit analysis of the \$20 million precursor to the NBGPP. The report calculated that the project would treat 5,650 acre-feet of groundwater per year, leading to a total treatment cost (including amortized capital costs and operation and maintenance costs) of \$576 per acre-foot of water. Although certain District witnesses asserted that a further cost-benefit analysis had been conducted on the \$200 million NBGPP, no such analysis was offered at trial. Based on the dramatic increase in the cost of the project, the trial court calculated that the cost of treating water in the shallow aquifer with the NBGPP would be more than three times the cost of importing an equivalent amount of clean water. While the District criticizes the trial court's calculations as speculative, there does not appear to be any direct evidence of the cost per acre-foot of water treated by the NBGPP, any comparison of that cost against the cost of other sources of water, or any comparison of that cost against other remedial

actions. Without this evidence, it is difficult for the District to meet its burden to show cost-effectiveness.³⁹

In addition to increased cost, the trial court found the NBGPP would have limited effect on VOC contamination in the North Basin area. The court credited impeachment evidence that the District's expert Graham Fogg had admitted removing one-third of the VOC contaminant mass over 30 years would be an "optimistic" estimate of the effect of the NBGPP on the shallow aquifer. (At trial, Fogg's estimate was one-half.) And defense expert Steven Larson testified that the NBGPP would not materially change the level of contaminants in the principal aquifer, especially in the areas surrounding existing drinking water production wells. The trial court's findings on effectiveness further undermine the District's own analyses, which were premised at least in part on the perceived benefit to the principal aquifer and drinking water production wells from the operation of the NGBPP. Without that benefit, the likely cost-effectiveness of the NBGPP (based solely on its limited effect on the shallow aquifer) decreases markedly.⁴⁰

The District offers a number of criticisms of the trial court's reasoning. We are unpersuaded by these criticisms given our standard of review and the evidence at trial.

And the District does not offer affirmative evidence that would show the cost-

³⁹ The District claims the trial court prevented it from presenting evidence showing the actual cost of water treated by the \$200 million NBGPP. The District does not describe the context of the trial court's decision and does not attempt to show the decision was error. The District's claim therefore has no effect on our analysis.

⁴⁰ In its briefing, the District estimates the reduction in VOC contamination in the shallow aquifer at 4,300 pounds, or 30 to 40 percent of the total contaminant mass. Using this estimate, and the District's updated \$200 million cost projection, the NBGPP appears to cost over \$46,500 per pound of remediated contamination.

effectiveness of the NBGPP in light of the findings by the trial court. It merely asserts the NBGPP would be effective in treating some VOC contamination, which does not address cost and is therefore insufficient. On the record before us, we cannot say the court erred in concluding that the District had not proven the NBGPP was cost-effective. The NBGPP is therefore not consistent with the NCP for this reason as well.

In addition to the goals of public participation and cost-effectiveness, the NCP mandates a number of procedural steps designed to ensure a CERCLA-quality cleanup. These steps include an NCP-compliant remedial investigation, feasibility study, and remedial documentation in a record of decision. (40 C.F.R. § 300.430(d)-(f); see *Carson Harbor II*, *supra*, 433 F.3d at pp. 1267-1269.) "The purpose of the remedial investigation (RI) is to collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives. To characterize the site, the lead agency [or party] shall, as appropriate, conduct field investigations, including treatability studies, and conduct a baseline risk assessment. The RI provides information to assess the risks to human health and the environment and to support the development, evaluation, and selection of appropriate response alternatives." (40 C.F.R. § 300.430(d)(1).) "The primary objective of the feasibility study (FS) is to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected. . . . The development and evaluation of alternatives shall reflect the scope and complexity of the remedial action under consideration and the site problems being addressed." (*Id.*, § 300.430(e)(1).) The feasibility study must

establish remedial action objectives, develop alternative remedial actions, and provide a detailed analysis of the alternatives (including a no action alternative where some removal or remediation has already occurred) across the nine criteria for evaluation we have already discussed. (*Id.*, § 300.430(e)(2), (e)(6), (e)(9).) After a remedy is selected, the NCP requires the party conducting the remedial action to document its selection in detail in a record of decision: "To support the selection of a remedial action, all facts, analyses of facts, and site-specific policy determinations considered in the course of carrying out activities in this section shall be documented, as appropriate, in a record of decision, in a level of detail appropriate to the site situation, for inclusion in the administrative record Documentation shall explain how the evaluation criteria in paragraph (e)(9)(iii) of [section 300.430] were used to select the remedy." (*Id.*, § 300.430(f)(5)(i).)

The trial court found that the District failed to comply with these requirements. The court determined that the District did not conduct a baseline risk assessment in its remedial investigation. The court noted that the District's focused feasibility study was based on the " 'presumptive remedy' " of treatment. Crediting the testimony of defense expert Larson, the court found that the focused feasibility study had inadequately assessed the No Action and Monitored Natural Attenuation alternatives. In the court's view, the District's supplemental focused feasibility study compounded these errors by materially changing the project (by treating additional contaminants, at one or two central locations) without reconsidering the No Action or Monitored Natural Attenuation alternatives in light of the changes. The supplemental focused feasibility study also did

not adequately explain the costs and benefits of the alternatives considered or their effect on the principal aquifer (rather than the shallow aquifer). The court did not believe the District's late 2005 staff report, which outlined the final iteration of the NBGPP, remedied these deficiencies.

Based on our review of the record, we conclude the District's efforts were not consistent with the NCP. The District's failure to conduct a baseline assessment of the risk to human health and the environment prevented the District (and the public) from adequately assessing the cost-effectiveness and necessity of the District's proposed remedial actions. (See *United States v. Burlington Northern R.R.* (10th Cir. 1999) 200 F.3d 679, 684.) Although the District assessed the nature and extent of VOC contamination in the North Basin area, its failure to assess the risks resulting from that contamination inhibited consideration of an important factor in choosing the District's response action.⁴¹ Moreover, whatever the merits of the District's focused feasibility

⁴¹ The District relies on *Carson Harbor II*, *supra*, 433 F.3d at page 1268, where the court held that a plaintiff "arguably conducted a remedial investigation that substantially complied with the [NCP]" because it "analyzed the physical characteristics of the [site], determined the level and kind of pollutants present, and to some extent, determined the potential source of the pollutants." The court stated, "Even though no public health assessment was conducted, only substantial compliance is required to satisfy the [NCP], and [plaintiff] meets that standard as to the remedial investigation." (*Ibid.*) We do not find the District's reliance on *Carson Harbor II* persuasive. Whether a party has substantially complied with the NCP is highly fact intensive. The rigor required of a plaintiff to substantially comply with the NCP will depend on a variety of factors, including the type and extent of the contamination and the cost and complexity of the remediation effort. *Carson Harbor II* involved contamination at a single site, consisting of tar-like material covering an area approximately 170 feet long by 75 feet wide, with depths of one to five feet. (*Id.* at p. 1262.) To the extent we can discern these facts from the court's opinion, the contamination and proposed remedial action in that case was on a

study, the changes over the ensuing decade to the design and cost of the NBGPP, the scope of contamination it sought to address, and the characteristics of the North Basin itself (e.g., extensive source removal and remediation at defendants' sites, among others) overtook the District's initial analysis. These changes rendered moot large sections of the focused feasibility study and blunted its value under the NCP. The District's subsequent analytic efforts, in its supplemental focused feasibility study and its late 2005 staff report, did not remedy these deficiencies. Instead, these subsequent efforts took the analysis of the focused feasibility study as given and analyzed the District's proposed changes to the project. Importantly, the District never reconsidered whether, in light of the changes to the project and the North Basin area, the No Action or Monitored Natural Attenuation alternatives merited further consideration. The District's efforts resulted in inadequate consideration of alternative remedial actions, including the NBGPP as eventually approved, and were therefore inconsistent with the NCP. The District's contrary arguments are unpersuasive.⁴²

Because the District has not shown its response costs were consistent with the NCP, it is not entitled to monetary recovery on its HSAA claim against any defendant,

much smaller scale than those at issue here. Given the size and scope of the NBGPP, the District's remedial investigation did not substantially comply with the NCP because it did not conduct a baseline assessment of risk to human health and the environment.

⁴² We disagree, however, with the trial court's finding that the District's documentation was not consistent with the NCP. Because the District had not selected a final remedy at the time of trial, it was not yet required to prepare and release a record of decision. (See 40 C.F.R. § 300.430(f)(5)-(f)(6); see also *State of California v. Neville Chemical Co.* (9th Cir. 2004) 358 F.3d 661, 670, fn. 7.) We likewise disagree that the District was required under the circumstances here to create a conceptual site model to establish consistency with the NCP. (See 40 C.F.R. § 300.430(b)(2).)

including Northrop. The court's errors identified above were therefore not ultimately prejudicial, and we will therefore affirm the court's judgment against the District on this claim. We next consider the separate question of the District's request for a declaration finding defendants liable for its future costs under the HSAA.

5. *Declaratory Relief and Equitable Apportionment*

The District sought a declaration that defendants would be jointly and severally liable under the HSAA for future costs of the NBGPP. The trial court rejected the District's claim for declaratory relief, and instead it issued a declaration that defendants "have no liability to the [District] for damages, response costs, or other costs claimed by the [District], or any future costs." We will consider the District's broader challenge to this declaration in part V, *post*. But several arguments regarding causation, NCP consistency, and equitable allocation implicate the HSAA specifically, so we will consider them here.

As we have explained, as to Alcoa, Arnold, CBS, and Crucible, we will affirm the judgment in their favor on the District's HSAA claim based, in part, on the trial court's causation findings. The District makes no argument for reversal of the trial court's declaration for these defendants where, as here, the trial court's causation findings stand. As to Northrop, we rely solely on the District's failure to prove NCP consistency in affirming the judgment in its favor on the District's HSAA claim. The District argues that NCP inconsistency cannot provide a basis for a declaration of no liability as to future costs because the District could remedy that inconsistency in the future. (See *Calmat Co. v. San Gabriel Valley Gun Club* (C.D.Cal. 2011) 809 F.Supp.2d 1218, 1224.) We agree.

The trial court's declaration of no liability as to future costs as to Northrop cannot be affirmed based on NCP noncompliance alone. Absent a valid ground for affirmance, the declaration as to future costs must be reversed as to Northrop.

On this point, defendants contend the declaration of no future liability reflects an equitable apportionment of zero percent responsibility to defendants and may therefore be affirmed on that basis. The HSAA allows such equitable apportionment: "In resolving claims for contribution or indemnity, the court may allocate costs among liable parties using appropriate equitable factors." (Health & Saf. Code, § 25363, subd. (d).) The HSAA differs in this regard from CERCLA, which does not allow equitable apportionment in actions for cost recovery under title 42 United States Code section 6907(a).⁴³ (See *PCS Nitrogen Inc. v. Ashley II of Charleston LLC* (4th Cir. 2013) 714 F.3d 161, 182.) The District's reliance on federal authorities regarding apportionment in CERCLA cost recovery actions is therefore unpersuasive. The District's claim under the HSAA is for indemnity (see part I.A., *ante*), and the HSAA expressly allows equitable apportionment for such claims. (Health & Saf. Code, § 25363, subd. (d).)

Although the trial court had the discretion to order equitable apportionment, based on our review of the court's statement of decision it did not do so. The court referenced

⁴³ CERCLA does allow equitable apportionment for contribution actions under title 42 United States Code section 9613(f)(1). The federal courts have identified a number of potential equitable factors for use in connection with these actions. (See, e.g., *United States v. Colorado & Eastern R. Co.* (10th Cir. 1995) 50 F.3d 1530, 1536, fn. 5; *Lockheed Martin Corp. v. United States* (D.D.C. 2014) 35 F.Supp.3d 92, 123-124.)

only "allocation," not "equitable allocation" or "equitable apportionment."⁴⁴ It did not reference the text of the statute allowing equitable apportionment, and it did not consider any equitable factors in determining that defendants should be allocated no liability. Instead, the court's allocation rested on its causation findings, including that "[t]he District did not persuade the trier of fact by a preponderance of the evidence that there was a causal connection between the Trial Defendants' activities and the need to incur response costs" and that "the conduct of the District and entities other than the Trial Defendants are a substantial factor in the District's decision to develop the NBGPP." The court concluded, "There is no factual basis for allocation of responsibility for past or future expenditures among the Trial Defendants or as between one or more Trial Defendant and the District."

The trial court's statement of decision shows that its zero allocation was not equitable in nature. It was based on the court's causation findings, not equitable factors. As such, for reasons we have already discussed, it cannot provide the basis for a future declaration of no liability under the HSAA for Northrop.

⁴⁴ The trial court used the word "equitable" once in its discussion of this issue, in reference to contamination not caused by defendants: "As between the Trial Defendants and the District, the District is responsible for all remediation costs attributable to nitrate and perchlorate contamination. There is no statutory or *equitable* principle that justifies holding the Trial Defendants liable on any theory, much less a joint and several one, for nitrate, perchlorate, TCP or DCA contamination." (Italics added.) In our view, this passage reflects the court's belief that defendants are not liable for the consequences of that contamination under any theory, not that they are liable under the HSAA but entitled to zero allocation based on equitable factors.

II. OCWD Act

The District contends the trial court erred by rejecting its claim under section 8 of the OCWD Act. That section empowers the District to "conduct any investigations of the quality of the surface and groundwaters within the [D]istrict . . . to determine whether those waters are contaminated or polluted" (OCWD Act, § 8, subd. (a)), to "perform any cleanup, abatement, or remedial work . . . needed to prevent, abate, or contain any threatened or existing contamination of, or pollution to, the surface or groundwaters of the [D]istrict" (*id.*, subd. (b)), and to seek recovery of its reasonable costs from "the person causing or threatening to cause that contamination or pollution" in a civil action (*id.*, subd. (c)). Subdivision (c) therefore creates a private right of action for cost recovery specific to the District: "If, pursuant to subdivision (b), the contamination or pollution is cleaned up or contained, the effects thereof abated, or in the case of threatened contamination or pollution, other necessary remedial action is taken, the person causing or threatening to cause that contamination or pollution shall be liable to the [D]istrict to the extent of the reasonable costs actually incurred in cleaning up or containing the contamination or pollution, abating the effects of the contamination or pollution, or taking other remedial action. The amount of those costs, together with court costs and reasonable attorneys' fees, shall be recoverable in a civil action by, and paid to, the [D]istrict." (*Id.*, § 8, subd. (c).)

The trial court rejected the District's claim under the OCWD Act on four grounds: (1) the District had not established causation; (2) the District's costs were not reasonable or necessary; (3) the District's costs were merely investigatory; and (4) the District had

not shown it had cleaned up, contained, or abated contamination or pollution, or taken other necessary remedial action in response to threatened contamination or pollution.

The District claims error as to each ground. For reasons we will explain, we conclude the trial court erred in interpreting the OCWD Act on each ground, but the errors were prejudicial only as to Northrop.

A. *Causation*

The District contends the court erred by finding that defendants had not caused the NBGPP and therefore were not liable under the OCWD Act. The meaning of the OCWD Act is a legal question subject to our independent review; the court's factual findings will be upheld if the evidence supports them. (See *Central Valley, supra*, 162 Cal.App.4th at p. 513.) The OCWD Act provides, in relevant part, as follows: "[T]he person *causing or threatening to cause that contamination or pollution* shall be liable to the district to the extent of the reasonable costs actually incurred in cleaning up or containing the contamination or pollution, abating the effects of the contamination or pollution, or taking other remedial action." (OCWD Act, § 8, subd. (c), italics added.) The causation standard under the OCWD Act differs from standard under the HSAA and CERCLA. Whereas the HSAA and CERCLA have a site-based causation requirement (with liable defendants identified on the basis on their relationship to a contaminated site), the OCWD Act requires proof that a defendant itself caused or threatened to cause contamination or pollution for which the District has incurred remediation costs.

The OCWD Act does not purport to depart from traditional tort principles of causation, so they apply here. (See *Centeno v. Roseville Community Hospital* (1979) 107

Cal.App.3d 62, 69.) As noted above, California has adopted the substantial factor test for causation in tort actions. (*Viner, supra*, 30 Cal.4th at p. 1239.) "[T]he 'substantial factor' test subsumes the traditional 'but for' test of causation." (*Id.* at p. 1240.) Thus, subject to an important exception, the "but-for" test governs: A defendant's conduct is not a substantial factor in bringing about harm (here, actual or threatened contamination or pollution) if the harm would have been sustained even if the defendant had not acted. (*Ibid.*) The exception applies where there are concurrent independent causes, i.e., the defendant's conduct is sufficient by itself to bring about the harm, but one or more other forces are operating independently that would also be sufficient by themselves to bring about the harm. (*Ibid.*) When this exception applies, the defendant's conduct satisfies the substantial factor test even though the defendant's conduct is not a "but-for" cause of the harm.

The District contends the trial court erred by requiring the District to show that each defendant caused the NBGPP as a whole. For reasons analogous to those we have already discussed under the HSAA and CERCLA (see part I.C.1.c., *ante*), we agree. The issue is not whether a defendant was a substantial factor in bringing about the entire NBGPP. Under the OCWD Act, the District was required to prove that a defendant was a substantial factor in bringing about actual or threatened contamination or pollution of surface or groundwater in the District. (OCWD Act, § 8, subs. (b), (c).)

Although the District has shown error, we must nonetheless affirm unless the error was prejudicial, i.e., it is reasonably probable the District would have obtained a more favorable result absent the error. Here, aside from Northrop, the trial court made factual

findings that mirrored the correct standard under the OCWD Act. Among the court's findings were the following: (1) "There is no direct evidence of any release of VOC's to the shallow aquifer in the NBGPP area by any Trial Defendant except Northrop." (2) "The preponderance of the evidence is that VOC releases to the shallow aquifer in the NBGPP area were not caused by any Trial Defendant except Northrop." (3) "The weight of the evidence establishes that [Alcoa], Arnold, CBS, and Crucible did not release Chemicals of Concern into the shallow aquifer (i.e., groundwater), nor do their past activities threaten future groundwater contamination." Given these findings, and as more fully explained in part I.C.1.e. *ante*, the District has not shown a reasonable probability that it would have obtained a more favorable result on this issue as to Alcoa, Arnold, CBS, and Crucible. As to Northrop, the trial court found that it had caused VOC contamination in the shallow aquifer. Causation under the OCWD Act requires the District to prove that a defendant "caus[ed] or threaten[ed] to cause . . . contamination or pollution" in surface or groundwater. (OCWD Act, § 8, subd. (c).) The trial court's finding shows that this element was satisfied. As to Northrop, therefore, it is reasonably probable the trial court would have found the District carried its burden on causation if it had used the correct causation standard.

Based on analogies to CERCLA and California negligence law, the District contends it was prejudiced as to all defendants. It argues that causation should be presumed where a defendant has generated a particular type of contamination or pollution and the District has incurred costs to respond to a similar type of contamination or pollution at the defendant's site. The District's argument ignores the text of the OCWD,

which ties the District's recovery to remedial actions taken in response to actual or threatened contamination or pollution caused by a specific defendant. The District's analogy to CERCLA relies on *Monsanto, supra*, 858 F.2d 160, *Asarco, supra*, 106 F.Supp.3d 1015, and *Castaic Lake, supra*, 272 F.Supp.2d 1053, and is unpersuasive for the reasons we have already discussed in part I.B.1., *ante*. The District's analogy to California negligence law relies on the principle that causation will be presumed where the defendant's wrongful conduct has made it impossible for the plaintiff to prove causation. (See, e.g., *Haft v. Lone Palm Hotel* (1970) 3 Cal.3d 756, 769-771.) We are unpersuaded that this principle applies here. Defendants' mere acts of contamination in this case did not make it impossible for the District to prove causation. To the contrary, the actions of defendants were revealed by contamination in the soil at their sites. Any difficulty in proving causation stemmed from the complexities of hydrogeology, not the actions of defendants, and would be present in any groundwater contamination case. The District has not shown prejudice as to any defendant other than Northrop. And, because causation is an essential element of the District's OCWD Act claim, the District's failure to show prejudice requires that we affirm the judgment against the District as to all defendants except Northrop on this claim. As to Northrop, however, we must consider the alternative grounds supporting the trial court's judgment to determine whether any properly support the judgment notwithstanding the court's error regarding causation.

B. *"Necessary" Remedial Actions and "Reasonable" Costs*

The second alternative ground for the trial court's judgment was its finding that the NBGPP was neither necessary nor reasonable. The OCWD Act requires that any

cleanup, containment, abatement, or remedial work be "necessary" and any incurred costs be "reasonable" in order for the District to recover. (OCWD Act, § 8, subd. (c).) The necessity of the District's actions, and the reasonableness of its costs, is presumed; defendants have the burden of proving otherwise. (*Ibid.*) The trial court concluded, "Whether the statutory presumptions of necessity and reasonableness applied or not, the Trial Defendants demonstrated the NBGPP was neither necessary nor reasonable in terms of cost insofar as the VOC, nitrate and perchlorate contamination they were being sued to pay for. In any event, the District had the burden to prove by a preponderance of the evidence that each Trial Defendant caused or threatened to cause groundwater contamination and that but for each defendant's conduct, the NBGPP would not have been necessary. Stated another way, the District had the burden to prove that each Trial Defendant's conduct was a substantial factor in the decision to develop the NBGPP. The District did not carry its burden."

The OCWD Act does not define the term "necessary." In interpreting the term, we focus first on the word itself, giving it its ordinary meaning. (*California School Employees, supra*, 8 Cal.4th at p. 338.) Here, based on our review of the language and purposes of the statute, the ordinary meaning of "necessary" as "needed or required" applies here. (American Heritage Dictionary of the English Language (5th ed. 2016).) In this sense, the OCWD Act uses the word "necessary" in the same way as CERCLA (and therefore the HSAA). For this reason, federal authorities interpreting the term in the CERCLA context instructive. In order to satisfy the OCWD Act's necessity requirement, the District must show "an actual and real threat to human health or the environment" and

"a response action [that] is addressed to that threat." (See *Carson Harbor I, supra*, 270 F.3d at pp. 871, 872.)

Because we conclude the requirement of "necessity" is the same under both CERCLA/HSAA and the OCWD Act, our discussion of the court's erroneous interpretation of that requirement in part I.C.3. *ante* applies equally here. To briefly reiterate, the trial court erred by assessing whether the entire NBGPP was necessary, rather than simply whether the District's actions for which it had incurred response costs were necessary. And, although it referenced the statutory presumption of necessity, it appears to have nonetheless placed the burden on the District to show some form of necessity. For that reason as well, the court erred. Under the proper standard of necessity, there is no substantial evidence for the court's conclusion that the District's response costs were not necessary.⁴⁵

Similarly, the court erred by assessing whether the costs of the entire planned NBGPP were reasonable, rather than simply the District's incurred costs for which it sought recovery. The OCWD Act allows recovery "to the extent of reasonable costs actually incurred." (OCWD Act, § 8, subd. (c).) It is possible, for example, that some costs incurred in connection with a remedial action will be reasonable and other costs will be unreasonable. Only the District's reasonable costs are recoverable.

The trial court's error prejudiced the District as to Northrop's Y-12 and Kester Solder sites. The trial court did not make any findings regarding the reasonableness of

⁴⁵ The court also appears to have conflated the requirement of necessity with the OCWD Act's causation requirement, which we discussed in the previous part.

the District's past incurred costs related to those sites, separate and apart from the NBGPP as a whole. Based on our review of the evidence, it is reasonably probable the court would have found at least some of the District's past costs reasonable if it had undertaken such an analysis under the correct standard.

It is unnecessary to consider prejudice as to the remaining defendants because the element of causation, which we discussed in the previous part, is an essential to the District's OCWD Act claim. Our conclusion that it is not reasonably probable that the trial court would have found in favor of the District on causation if it had used the correct standard fatally undermines the claim.

C. Recovery of Investigatory Costs

The third alternative ground for the trial court's judgment was its finding that the District's past costs for installing monitoring and extraction wells were merely "investigatory" and therefore not recoverable under the OCWD Act. The court reasoned that such costs fell within the District's power to conduct "investigations" under the OCWD Act, section 8, subdivision (a). Because the OCWD Act allows recovery of costs incurred pursuant to the District's power to perform cleanup, abatement, or remedial work under the OCWD Act, section 8, subdivision (b)—not investigations under subdivision (a)—the court found that the monitoring and extraction well costs were not recoverable.

On de novo review, we conclude the trial court incorrectly restricted the scope of recoverable costs under the OCWD Act. The issue is not whether the claimed costs fall under the District's power under section 8, subdivision (a) and are therefore excluded. It is whether the claimed costs fall under section 8, subdivisions (b) and (c) and are

therefore included. A given action, for example, might fall under both grants of power. It was error for the trial court to conclude the two subdivisions are mutually exclusive.

The OCWD Act, section 8, subdivision (c) allows recovery of "the reasonable costs actually incurred in cleaning up or containing the contamination or pollution, abating the effects of the contamination or pollution, or taking other remedial action." A cost is recoverable if it is incurred as part of these remedial actions. As our discussion of the NCP shows, a remedial action involves much more than simply the physical cleanup or containment process itself. It involves investigation, planning, design, development, and documentation. Because these activities are part of remedial action, the costs of such activities are recoverable.⁴⁶

⁴⁶ Although the HSAA's definition of "remedy" and "remedial action" does not directly apply to the subsequently-enacted provisions of the OCWD Act, we find it instructive regarding the Legislature's use of a similar term in this related context. (See *Central Pathology Service Medical Clinic, Inc. v. Superior Court* (1992) 3 Cal.4th 181, 187 ["Although the Legislature did not repeat that definition . . . , we must presume that the Legislature was familiar with existing statutory definitions."]; see also *Trope v. Katz* (1995) 11 Cal.4th 274, 282.) The HSAA's definition of "remedy" and "remedial action" includes CERCLA's definition of the same terms. (Health & Saf. Code, § 25322, subd. (a).) CERCLA's definition states, "The terms 'remedy' or 'remedial action' mean[] those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment." (42 U.S.C. § 9601(24).) The CERCLA definition goes on to provide the following examples: "cleanup of released hazardous substances and associated contaminated materials," "onsite treatment or incineration," "any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment," and "offsite transport and offsite storage, treatment, destruction, or secure disposition of hazardous substances and associated contaminated materials." (*Ibid.*) In addition to the CERCLA definition, the HSAA's definition includes the following additional categories: "[t]hose actions that are necessary to monitor, assess, and evaluate

Resisting this conclusion, defendants rely on the well-settled maxim of statutory interpretation that different words or phrases in a statute must have different meanings. (See, e.g., *Roy v. Superior Court* (2011) 198 Cal.App.4th 1337, 1352 (*Roy*) [" ' "Ordinarily, where the Legislature uses a different word or phrase in one part of a statute than it does in other sections or in a similar statute concerning a related subject, it must be presumed that the Legislature intended a different meaning." ' "].) But words or phrases can have different meanings without being mutually exclusive. In other words, different words and phrases may have overlapping, but not coextensive, meanings. For example, in *Regents of the University of California v. Superior Court* (2013) 220 Cal.App.4th 549, 564-565, the court compared the meanings of "disclose" and "release" as used in different sections of the Confidentiality of Medical Information Act (Civ. Code, § 56 et seq.). The court recognized the terms were "not synonymous" and therefore had different common or ordinary meanings. (*Regents of the University of California*, at p. 564) Nonetheless, the court implicitly recognized their meanings overlapped, describing the definition of release as "broader" than the definition of disclose. (*Ibid.*; see *Roy, supra*, 198 Cal.App.4th at pp. 1352-1353 [recognizing that the term "sexual relations" was broader than, but overlapped with, the term "sexual contact" as used in physician disciplinary statutes].)

a release or a threatened release of a hazardous substance" and "[s]ite operation and maintenance." (Health & Saf. Code, § 25322, subds. (b), (c).) The former category encompasses the type of remediation activities characterized by the trial court here as nonrecoverable investigations.

The different meanings of the OCWD Act provisions at issue are readily apparent. Section 8, subdivision (a), gives the District broad power to conduct investigations of surface and groundwater quality, unconstrained by any known contamination or prospective remedial action. Section 8, subdivision (b), gives the District power to conduct cleanup, abatement, and remedial work. These subdivisions plainly have different meanings, even though they overlap. The relevant question for purposes of a cost recovery action is simply whether the costs in question fall within the latter subdivision. The fact that some costs may also fall within the former subdivision is of no moment.

Defendants rely on a federal district court opinion interpreting the cost recovery provisions of the OCWD Act. (*In re Methyl Tertiary Butyl Ether Products Liability Litigation* (S.D.N.Y. 2011) 824 F.Supp.2d 524 (*MTBE Litigation*)). In that case, the court considered whether costs associated with the following activities were recoverable: "[T]he District (1) 'has conducted testing for MTBE at drinking water production wells associated with stations where MTBE was released' and (2) 'retained consultants to investigate and characterize the groundwater impacts from MTBE . . . released at gasoline stations within the District's service area' at a cost of at least six-hundred thousand dollars." (*Id.* at p. 534, footnotes omitted.) The court concluded these costs were not recoverable: "Testing and report-commissioning constitute *investigatory* work, not 'remedial action.' The District conducts testing as part of its regular course of business. As for the consultant reports, creating summaries of the activities of others at the sites at issue in this motion has nothing to do with remedying threatened

contamination. Nor is there any evidence that the District's consultants' file review has led or will lead to remedial action at these sites, or off-site. In fact, there is no evidence that the District has done anything with these consultant reports outside of this litigation." (*Id.* at p. 535, footnotes omitted.)

Although the *MTBE Litigation* court adhered to a strict and unwarranted distinction between investigatory costs and remedial action, its discussion reflects some of the factors that a court should use to determine whether an activity that could be characterized as investigatory is nonetheless also part of a remedial action. For example, if a plaintiff conducts testing as part of its "regular course of business," and not in response to contamination or threatened contamination, that could indicate that such testing is not remedial action. (See *MTBE Litigation, supra*, 824 F.Supp.2d at p. 535.) Similarly, if a plaintiff drafts reports that have "nothing to do with remedying threatened contamination," that could indicate that the reports are not part of a remedial action. (See *ibid.*) Because we do not have the relevant record before us, we cannot comment on the *MTBE Litigation* court's conclusion regarding the specific costs at issue in that litigation. But we are not persuaded that its conclusion should affect our interpretation of the OCWD Act discussed above.⁴⁷

For the foregoing reasons, the trial court here erred by interpreting the OCWD Act to preclude recovery for *all* investigatory activities, no matter how closely tied to

⁴⁷ The federal district court reiterated its conclusion in a subsequent opinion but did not offer any significant additional discussion or analysis. (*In re Methyl Tertiary Butyl Ether Products Liability Litigation* (S.D.N.Y. 2011) 279 F.R.D. 131, 138.)

remedial action. The court's error was prejudicial to the District, at least viewing this issue in isolation, because it categorically excluded the District from obtaining otherwise-recoverable costs. However, the prejudice stemming from this error effectively applies only to Northrop because we have found that the District was not prejudiced by the trial court's findings on causation as to the non-Northrop defendants, the failure to satisfy that element is fatal to the District's OCWD Act claim, and the trial court's findings relative to that element would not have been affected by this error regarding investigatory costs.

D. Preconditions to Cost Recovery

The fourth alternative ground for the trial court's judgment was its finding that the District had not shown that "the contamination or pollution [was] cleaned up or contained, the effects thereof abated, or in the case of threatened contamination or pollution, other necessary remedial action [was] taken," as required for cost recovery under section 8, subdivision (c) of the OCWD Act. Because the District does not allege legal error, we review the court's finding for substantial evidence.

The evidence at trial showed past VOC contamination of varying degrees in the shallow soil at each defendant's site, as well as a large plume of VOC contamination in the shallow aquifer in the North Basin area. It was undisputed that the District had not cleaned up any VOC contamination by the time of trial. It was also undisputed, however, that VOC contamination had attenuated to some extent due to natural processes.

The ordinary meaning of "abate" is "[t]o reduce in amount, degree, or intensity" or "lessen." (American Heritage Dict. (2016 ed.)) Given this meaning, and the undisputed evidence, we conclude the trial court could not reasonably find that the effects of VOC

contamination in the North Basin area had not abated. It was undisputed they had. The trial court focused on the District's activities, finding that the District had not yet cleaned up, contained, or abated any contamination. But this portion of the OCWD Act focuses on the result, not the mechanism of action. As defendants point out in their criticism of the NBGPP, monitored natural attenuation is a valid response action to groundwater contamination. The District should not be disincentivized from pursuing this response action, where warranted, based on a reading of the OCWD Act that would preclude cost recovery for such an action.

We also conclude the court could not reasonably find that there was no threatened contamination in the North Basin area. The ordinary meaning of the word "threat" in this context is "[a]n indication of an approaching menace; the suggestion of impending detriment" and "[a] person or thing that might well cause harm." (Black's Law Dict. (10th ed. 2014).) Industrial landowners and operators, including some defendants, had released large amounts of VOC's into the shallow soil. In some cases, this VOC contamination migrated through about 100 feet of soil to the shallow aquifer and was carried offsite with the flow of groundwater, resulting in plumes of contamination above minimum acceptable levels. These surface VOC releases, and their resulting plumes, were an "approaching menace" that "might well cause harm" to groundwater.

In reaching its conclusion that VOC releases in the North Basin area did not threaten contamination, the court referenced the definition of "threaten" in an analogous section of the Water Code: " 'Threaten,' for purposes of this section, means a condition creating a substantial probability of harm, when the probability and potential extent of

harm make it reasonably necessary to take immediate action to prevent, reduce, or mitigate damages to persons, property, or natural resources." (Water Code, § 13304, subd. (e).) The court focused on the phrase "immediate action" and reasoned that the District had not shown sufficient urgency in its actions to qualify under this statute. The court's analysis puts the proverbial cart before the horse. Even accepting this definition of "threaten," the focus of the analysis is the contamination itself, not whether the District's response was adequate. Here, it would be unreasonable to conclude the extensive VOC releases in the North Basin area did not justify immediate action. Whether the District appropriately pursued such action is another matter.

The trial court also stated, "A vague or possible or potential threat of groundwater contamination in the future based on 20th century VOC releases onto the surface soil is too speculative to trigger the conditional clause in the [OCWD Act] for future remediation which may or may not occur." The import of the trial court's statement is unclear. VOC groundwater contamination in the North Basin area was not "vague or possible or potential"—it was a fact, documented by numerous environmental consultants and government agencies. And the OCWD Act's cost recovery provisions are not "conditional." They allow recovery of "reasonable costs *actually incurred* in cleaning up or containing the contamination or pollution, abating the effects of the contamination or pollution, or taking other remedial action." (OCWD Act, § 8, subd. (c), italics added.)

We conclude the court erred by finding that the District had not shown that the effects of VOC contamination had abated or that other remedial action had been taken in response to threatened VOC contamination. As with the issue of investigatory costs

considered in the previous part, this error—viewed in isolation—was prejudicial to the District as to all of defendants because it precluded any recovery on the District's claim. However, the prejudice stemming from this error effectively applies only to Northrop for the same reasons we discussed in the previous part. We will therefore affirm the court's judgment on the District's OCWD Act claim as to Alcoa, Arnold, CBS, and Crucible. As to Northrop, because we have found the trial court erred as to each of the four alternative grounds supporting the judgment, and those errors were prejudicial, we will reverse the judgment.⁴⁸

III. *Common Law Claims*

The District next contends the trial court erred by (1) bifurcating trial and scheduling a bench trial on the District's equitable claims before a jury trial on the District's legal (common law) claims and (2) treating its factual findings following the bench trial as binding on the District's legal claims. The District argues that the court deprived it of its right to trial by jury on its legal claims and thereby violated Code of Civil Procedure section 1048, subdivision (b); that the factual findings on the District's equitable claims involved different issues than its legal claims (or were unnecessary) and

⁴⁸ Defendants urge affirmance on the additional ground that the settlements the District has received already exceed its past incurred costs. They argue that any liability under the OCWD Act is fully offset by these settlement amounts. (See Code Civ. Proc., § 877; *Arbuthnot v. Relocation Realty Service Corp.* (1991) 227 Cal.App.3d 682, 687.) Even assuming defendants are entitled to some offset, they have not accounted for issues of apportionment among the District's various claims and among the defendants themselves. They have not shown, for example, that the portion of the settlements that would be apportioned to liability under the OCWD Act for which defendants are responsible would exceed their liability under that Act. Defendants' argument is unpersuasive.

therefore do not apply; and that new evidence arising after the bench trial required the court to allow a jury trial on the District's legal claims.

In advance of a pretrial status conference, the District submitted a statement proposing that its legal claims be tried first before a jury and its equitable claims be determined by the court afterwards. Defendants proposed the opposite schedule. They explained that any factual findings made as a result of the bench trial would be binding in the jury trial, thereby shortening the jury trial or eliminating it entirely.

At the status conference, the court said it was inclined to try the equitable issues first. The District expressed its concern that it would not be able to present its legal claims to a jury if the court resolved its equitable claims adversely: "And the problem is that if you rule on any issue, the defendants will argue that that precludes us from going to a jury on our tort claims, that that's been resolved for all time." The court responded, "Well, that can be handled before we start the trial with exactly some understanding, either an understanding among counsel or an order from the court, as to exactly what the court's rulings mean, doesn't it?" The District agreed, "That's one potential solution," but it was concerned about duplicative presentations of evidence. The court discussed what would happen if the District did not prevail on its equitable claims: "Let's take the flip side. You do the court trial and plaintiffs don't prevail on the statutory causes of action. As long as we're clear going in kind of what the parameters are, plaintiff would still have a choice whether plaintiff wanted to—having had a verdict or a judgment—or a decision in a court trial on statutory causes of action, whether it makes sense to go forward with a jury." The court later remarked, "But I think we all agree that while you have an absolute

right—an absolute right—and I would never try and talk anybody out of a jury trial on the causes of action where you'd have the right to a jury trial—sometimes that's not the economically or physically, that's not the best way to go." After a lengthy discussion of joint and several liability, the court stated, "But look, unless someone comes up with a real show stopper, I'm inclined to try the court issues first. I think on balance it is just a better way to go."⁴⁹

As we have discussed, the court held a bench trial on the District's claims under the OCWD Act and the HSAA and for declaratory relief. The court found in favor of defendants on each claim. Following trial, defendants filed a motion for judgment on the District's remaining claims for negligence, nuisance, and trespass. Defendants argued that the court's causation findings in its statement of decision would apply in any jury trial on the District's claims. In defendants' view, these findings precluded recovery on the District's claims because those claims each required a showing of causation. The District opposed. Following argument, the court granted the motion for judgment.

⁴⁹ To the extent defendants argue the District forfeited its argument that the trial court erred because it failed to object in its pretrial briefs, we disagree. "If the party, at the time when the order, ruling, action or decision is sought or made, or within a reasonable time thereafter, makes known his position thereon, by objection or otherwise, all other orders, rulings, actions or decisions are deemed to have been excepted to." (Code Civ. Proc., § 647.) Here, the District made known its position both in its status conference statement and at the status conference itself that the court should hold a jury trial first and the bench trial thereafter. It did not have to object again after the court announced its intent to hold the bench trial first; it had already made its position known. The District did not forfeit its claim of error.

A. Trial Sequencing and the Right to Trial by Jury

As noted, the District argues that the sequencing of trial, and the subsequent application of the court's equitable findings to the District's legal claims, violated its right to trial by jury and thereby ran afoul of Code of Civil Procedure section 1048, subdivision (b).⁵⁰ That statute provides, in relevant part, as follows: "The court, in furtherance of convenience or to avoid prejudice, or when separate trials will be conducive to expedition and economy, may order a separate trial of any cause of action, including a cause of action asserted in a cross-complaint, or of any separate issue or of any number of causes of action or issues, preserving the right of trial by jury required by the Constitution or a statute of this state or of the United States." (Code Civ. Proc., § 1048, subd. (b).)

We review the court's order determining the sequence of a bifurcated trial for abuse of discretion. (*Hoopes v. Dolan* (2008) 168 Cal.App.4th 146, 163 (*Hoopes*).) This discretion is not unlimited: "The scope of discretion always resides in the particular law being applied, i.e., in the "legal principles governing the subject of [the] action" Action that transgresses the confines of the applicable principles of law is outside the scope of discretion and we call such action an "abuse" of discretion.' " (*Horsford v. Board of Trustees of California State University* (2005) 132 Cal.App.4th 359, 393.) We independently interpret the relevant statutes and determine the applicable principles of

⁵⁰ The same issue arises in the related appeal involving MAG. (See fn. 2, *ante*.)

law. (*Shamrock Foods, supra*, 24 Cal.4th at p. 432; *Lamar Central Outdoor, LLC v. California Department of Transportation* (2013) 221 Cal.App.4th 810, 821.)

The District's contention requires us to interpret Code of Civil Procedure section 1048, subdivision (b). "The objective of statutory construction is to determine the intent of the enacting body so that the law may receive the interpretation that best effectuates that intent. [Citation.] "We first examine the words themselves because the statutory language is generally the most reliable indicator of legislative intent. [Citation.] The words of the statute should be given their ordinary and usual meaning and should be construed in their statutory context." [Citation.] [Citation.] 'If the plain, commonsense meaning of a statute's words is unambiguous, the plain meaning controls.' [Citation.] 'We consider extrinsic aids, such as legislative history, only if the statutory language is reasonably subject to multiple interpretations.' " (*City of Alhambra v. County of Los Angeles* (2012) 55 Cal.4th 707, 718-719.)

The plain language of Code of Civil Procedure section 1048, subdivision (b) requires a court to preserve a party's right to a jury trial when ordering separate trials, but it does not itself define a party's jury trial right or what "preserving" it requires. We will therefore consider extrinsic aids, including case authority regarding California's jury trial right and the legislative history of this statute, to interpret its language.

"A jury trial, [a]s a general proposition, ". . . is a matter of right in a civil action at law, but not in equity." [Citations.] [Citation.] An action at law is one for which a jury trial was permitted at common law as it existed at the time our Constitution was first adopted in 1850." (*Nwosu v. Uba* (2004) 122 Cal.App.4th 1229, 1237 (*Nwosu*)). The

parties here agree that the District's common law claims for negligence, nuisance, and trespass are actions at law and therefore the District has a right to trial by jury on those claims.⁵¹

By joining its equitable and legal claims in one action, the District did not lose this jury trial right. "It is settled in this state that where legal and equitable issues are joined in the same action the parties are entitled to a jury trial on the legal issues." (*Robinson v. Puls* (1946) 28 Cal.2d 664, 665-666; see *Swasey v. Adair* (1891) 88 Cal. 179, 180 (*Swasey*); *Selby Constructors, Inc. v. McCarthy* (1979) 91 Cal.App.3d 517, 526.) In light of reforms that allowed a plaintiff to assert both legal and equitable claims in the same forum, the Supreme Court explained "it does not seem desirable to force a party to give up his right to a jury trial as an alternative to utilizing the advantages of modern code procedure designed to permit settlement of various issues in a single action." (*Connell v. Bowes* (1942) 19 Cal.2d 870, 872 (*Connell*).

The recognition that a plaintiff did not give up his or her jury trial right by combining equitable and legal causes of action, however, was accompanied by an important caveat: A trial court handling such a combined action could, and in many cases should, hold a bench trial on any equitable issues first. (*Connell, supra*, 19 Cal.2d at p. 872.) "[I]f any legal issues remain [after the bench trial], a jury may be called." (*Ibid.*, italics added; see *Swasey, supra*, 88 Cal. at pp. 180-181.) Thus, while a plaintiff

⁵¹ The District does not argue it had a right to a jury trial on its claims under the HSAA or the OCWD Act. We therefore assume without deciding that the trial court could properly try these claims, standing alone, without a jury.

retained his jury trial right, the extent of the issues actually tried by jury could be impacted by the trial court's findings in equity. "Where a 'mixed bag' of legal and equitable claims is presented in a case, a court trial of the equitable claims first may obviate the necessity of a jury trial on the legal claims, but otherwise the plaintiff cannot be denied the right to a jury trial on the legal causes of action. [Citations.] If 'there are equitable and legal remedies sought in the same action, the parties are entitled to have a jury determine the legal issues *unless* the trial court's initial determination of the equitable issues is also dispositive of the legal issues, leaving nothing to be tried by a jury.' "

(*DiPirro v. Bondo Corp.* (2007) 153 Cal.App.4th 150, 185 (*DiPirro*), italics added.)⁵²

Numerous opinions from California courts, including our Supreme Court, confirm this rule: "It is well established that, in a case involving both legal and equitable issues, the trial court may proceed to try the equitable issues first, without a jury . . . , and that if the court's determination of those issues is also dispositive of the legal issues, nothing further remains to be tried by a jury." (*Raedeke v. Gibraltar Savings & Loan Assn.* (1974) 10 Cal.3d 665, 671 (*Raedeke*); see, e.g., *Darbun Enterprises, Inc. v. San Fernando Community Hospital* (2015) 239 Cal.App.4th 399, 408-409 (*Darbun*); *Hoopes, supra*, 168 Cal.App.4th at p. 157; *Nwosu, supra*, 122 Cal.App.4th at p. 1238; *Golden West*

⁵² The result that the court's findings in the bench trial may limit or obviate the need for a jury trial flows from a different principle of general applicability: "Issues adjudicated in earlier phases of a bifurcated trial are binding in later phases of that trial and need not be relitigated." (*Arntz Contracting Co. v. St. Paul Fire & Marine Insurance Co.* (1996) 47 Cal.App.4th 464, 487 (*Arntz Contracting*)). The same result occurs if the procedure is reversed. If the trial court holds a jury trial first on any legal issues, the court is bound by the jury's factual findings when it considers any equitable issues. (*Hoopes, supra*, 168 Cal.App.4th at pp. 157-158.)

Baseball Co. v. City of Anaheim (1994) 25 Cal.App.4th 11, 50; *Jaffe v. Albertson Co.* (1966) 243 Cal.App.2d 592, 609; *Moss v. Bluemm* (1964) 229 Cal.App.2d 70, 73; *Richard v. Degen & Brody, Inc.* (1960) 181 Cal.App.2d 289, 295.)

Indeed, reviewing courts have emphasized that the better practice for trial courts is to decide equitable issues first for the explicit reason that a jury trial on any legal issues may be avoided. "Generally, in mixed actions, the equitable issues should be tried first by the court, either with or without an advisory jury. [Citations.] Trial courts are encouraged to apply this 'equity first' rule because it promotes judicial economy by potentially obviating the need for a jury trial." (*Darbun, supra*, 239 Cal.App.4th at pp. 408-409; see, e.g., *Hoopes, supra*, 168 Cal.App.4th at p. 157; *Nwosu, supra*, 122 Cal.App.4th at p. 1238.) Under these authorities, the trial court's decision to bifurcate trial and decide the District's equitable claims first was proper.

The District argues that these authorities fail to give effect to Code of Civil Procedure section 1048, subdivision (b), which requires courts to "preserv[e] the right of trial by jury required by the Constitution or a statute of this state or of the United States" when ordering separate trials. The District points out that this language was part of a broader revision intended to conform the statute to its federal counterpart, Rule 42 of the Federal Rules of Civil Procedure (28 U.S.C.). The District contends that Rule 42 prohibits the "equity first" procedure followed in California and that the Legislature's adoption of revised Code of Civil Procedure section 1048 indicates its intent to adopt Rule 42's prohibition for California courts as well.

The District's premise is flawed. The federal prohibition of the "equity first" procedure stems not from Rule 42 but from federal constitutional law. In *Beacon Theatres, Inc. v. Westover* (1959) 359 U.S. 500 (*Beacon Theatres*), the United States Supreme Court recognized that existing federal rules gave trial courts the discretion to try equitable issues first. (*Id.* at p. 510.) *Beacon Theatres* held that this discretion was limited in federal cases by the Seventh Amendment: "Since the right to [a] jury trial is a constitutional one, however, while no similar requirement protects trials by the court, that discretion is very narrowly limited and must, wherever possible, be exercised to preserve jury trial." (*Ibid.*, fn. omitted.)

The Seventh Amendment applies only in federal courts; it does not apply to the states. (*Curtis v. Loether* (1974) 415 U.S. 189, 192, fn. 6; *Crouchman v. Superior Court* (1988) 45 Cal.3d 1167, 1173, fn. 5.) *Beacon Theatres* and its progeny are therefore not binding on California courts. (See *Rankin v. Frebank Co.* (1975) 47 Cal.App.3d 75, 92.)

At the time *Beacon Theatres* was decided, Rule 42 was silent on the issue of the right to a jury trial. In 1966, seven years after *Beacon Theatres*, Rule 42 was amended to include the italicized language in the following excerpt: "The court, in furtherance of convenience or to avoid prejudice, *or when separate trials will be conducive to expedition and economy*, may order a separate trial of any claim, cross-claim, counterclaim, or third-party claim, or of any separate issue or of any number of claims, cross-claims, counterclaims, third-party claims, or issues, *always preserving inviolate the right of trial by jury as declared by the Seventh Amendment to the Constitution or as given by a statute of the United States.*" (Former Fed. Rules Civ. Proc., rule 42, 28

U.S.C., italics added.) The Advisory Committee Notes to Rule 42 indicate that the purpose of the second italicized portion was not to codify the holding of *Beacon Theatres*, but to ensure federal trial courts were cognizant of the Seventh Amendment when ordering separate trials. (Fed. Rules Civ. Proc., rule 42 foll., 28 U.S.C., citing *United Air Lines, Inc. v. Wiener* (9th Cir. 1961) 286 F.2d 302, 305.)

After Rule 42 was amended, the California Legislature amended Code of Civil Procedure section 1048, the statute governing separate trials in California courts, to "conform in substance to Rule 42 of the Federal Rules of Civil Procedure." (Sen. Com. on Judiciary, Rep. on Sen. Bill No. 201 (1971 Reg. Sess.) 1 Sen J. (1971 Reg. Sess.) p. 888; see *Rodriguez v. Bethlehem Steel Corp.* (1974) 12 Cal.3d 382, 407, fn. 28.) Subdivision (b) of the statute was amended to read as follows: "The court, in furtherance of convenience or to avoid prejudice, or when separate trials will be conducive to expedition and economy, may order a separate trial of any cause of action, including a cause of action asserted in a cross-complaint, or of any separate issue or of any number of causes of action or issues, *preserving the right of trial by jury required by the Constitution or a statute of this state or of the United States.*" (Stats. 1971, ch. 244, § 58, italics added.)

Although the District has submitted legislative history for S.B. 201, which effected this amendment, nothing in this history shows that the Legislature intended to adopt the reasoning of *Beacon Theatres*. Instead, the comments of the Senate Committee on the Judiciary state, in relevant part, "The revision makes clear not only that the court may sever causes of action for trial but also that the court may sever issues for trial." (Sen.

Com. on Judiciary, Rep. on Sen. Bill No. 201 (1971 Reg. Sess.) 1 Sen J. (1971 Reg. Sess.) pp. 888-889.) The sequence of the severed trial was not discussed.

The District points to the well-settled rule that "[w]hen the Legislature adopts the substance of a non-California statute, the Legislature is presumed to have acted with knowledge and in light of decisions interpreting the adopted statute." (*Hodge v. Kirkpatrick Development, Inc.* (2005) 130 Cal.App.4th 540, 555.) But, as we have discussed, the federal rule against "equity first" sequencing is not an interpretation of Rule 42. It is a requirement of the Seventh Amendment, as *Beacon Theatres* and its progeny explain. (*Beacon Theatres, supra*, 359 U.S. at p. 510; see *Ross v. Bernhard* (1970) 396 U.S. 531, 537-538; *Dairy Queen, Inc. v. Wood* (1962) 369 U.S. 469, 471-472.)

The District attempts to limit California's "equity first" rule only to certain situations that do not apply here, such as where the plaintiff seeks mutually exclusive legal and equitable remedies or where the defendant asserts an equitable defense. While certain cases have highlighted these grounds as historic reasons for preferring the "equity first" procedure (see, e.g., *Hoopes, supra*, 168 Cal.App.4th at p. 157), the rule announced in numerous appellate cases — and by our Supreme Court — is not so limited. (*Raedeke, supra*, 10 Cal.3d at p. 671; *Darbun, supra*, 239 Cal.App.4th at pp. 408-409; *Hoopes, supra*, 168 Cal.App.4th at p. 157; *DiPirro, supra*, 153 Cal.App.4th at p. 185; *Nwosu, supra*, 122 Cal.App.4th at p. 1238; *Golden West Baseball Co. v. City of Anaheim, supra*, 25 Cal.App.4th at p. 50; *Jaffe v. Albertson Co., supra*, 243 Cal.App.2d at p. 609; *Moss v. Bluemm, supra*, 229 Cal.App.2d at p. 73; *Richard v. Degen & Brody, Inc., supra*, 181

Cal.App.2d at p. 295.) Leading commentators agree. (See, e.g., 7 Witkin, Cal. Procedure (5th ed. 2008) Trial, § 149; Weil & Brown, Cal. Practice Guide: Civil Procedure Before Trial (The Rutter Group 2016) ¶ 12:304.1.)

The District relies on *Walton v. Walton* (1995) 31 Cal.App.4th 277 (*Walton*) as explicitly articulating a contrary rule. *Walton* approved of an "equity first" procedure on the grounds the plaintiff sought mutually exclusive equitable and legal remedies. (*Id.* at p. 293.) *Walton* further commented, in dicta, that when a plaintiff seeks *cumulative* legal and equitable remedies, "all claims — legal and equitable — must be tried, and the right to jury trial cannot be defeated by severance of the equitable claim." (*Ibid.*)

This comment is not supported by the authorities cited by *Walton*. (See *Walton, supra*, 31 Cal.App.4th at p. 293, citing *Connell, supra*, 19 Cal.2d 870; *Pacific Western Oil Co. v. Bern Oil Co.* (1939) 13 Cal.2d 60 (*Pacific Western*); *Hutchason v. Marks* (1942) 54 Cal.App.2d 113 (*Hutchason*.) Those authorities stand for the settled proposition that a plaintiff does not lose his or her right to a jury trial on its legal claims by combining those claims with equitable claims. (*Connell*, at p. 872; *Pacific Western*, at p. 68; *Hutchason*, at p. 119.) And, as we have noted, *Connell* approved of the "equity first" rule. (*Connell, supra*, 19 Cal.2d at p. 872.) We find *Walton's* dicta unpersuasive and will adhere to the long-standing and well-settled "equity first" rule articulated in the cases cited above. The trial court did not abuse its discretion by following the rule here.

On reply, the District contends that even if the "equity first" rule were valid, the trial court erred under the specific circumstances here by giving preclusive effect to its factual findings in connection with the District's equitable claims. The District points to

the court's comments during a status conference that the District had an "absolute right" to a jury trial and that the court "would never try and talk anybody out of jury trial on the causes of action where you'd have the right to a jury trial."

The District relies on the recent case of *Darbun*, *supra*, 239 Cal.App.4th 399. *Darbun* considered whether a trial court properly gave preclusive effect to its factual findings in a first-phase bench trial under the "equity first" rule. (*Id.* at pp. 410-411.) *Darbun* found error based on the trial court's "inconsistent and misleading statements" regarding, among other things, which issues would be decided during the first phase bench trial. (*Id.* at pp. 409-410.) "The parties proceeded through the first phase of trial, then to jury trial, under the court's assurances that the jury would decide the issue of breach." (*Id.* at p. 411.) The trial court subsequently decided the issue of breach, which *Darbun* held deprived the plaintiff of its jury trial right. "Had the trial court properly informed the parties of an intention to decide the issue of breach, [the plaintiff] would have had the opportunity to preserve its right to a jury trial by abandoning its request for equitable relief and seeking only damages." (*Ibid.*)

Here, unlike *Darbun*, the trial court did not limit the issues it would consider in connection with the bench trial on the District's equitable claims. During the status conference, the court mentioned the possibility the parties might come to an agreement regarding such a limitation, but no agreement appears in the record. The court's references to the District's right to a jury trial were consistent with longstanding case law holding that the District did not lose its right to a jury trial on its legal claims when it combined those claims with equitable claims in a single action. (See *Connell*, *supra*, 19

Cal.2d at p. 872.) As we have explained, however, this jury trial right is not inconsistent with the further principle that any factual findings made following a bench trial on the District's equitable claims may be binding on its legal claims, and the right is not infringed by its application. (See *DiPirro, supra*, 153 Cal.App.4th at p. 185; *Nwosu, supra*, 122 Cal.App.4th at p. 1244 ["Here, the fact that the trial of the equitable issues first resulted in factual findings that implicated the legal claims does not mean that [plaintiff] was improperly denied the right to a jury trial."].) The District has not shown any error.

C. "Necessary" Findings

The District alternatively argues that, even if the sequencing of trial were proper, the court's causation findings were not necessary (because other findings also foreclosed the District's claims) and therefore could not be applied to the District's legal claims. The District is incorrect. All of the trial court's equitable findings were binding on the District's legal claims, regardless of whether they were necessary for the judgment. "Issues adjudicated in earlier phases of a bifurcated trial are binding in later phases of that trial and need not be relitigated. [Citations.] No other rule is possible, or bifurcation of trial issues would create duplication, thus subverting the procedure's goal of efficiency. [Citation.] '[D]uplication of effort is the very opposite of the purpose of bifurcated trials.'" (*Arntz Contracting, supra*, 47 Cal.App.4th at p. 487; see *Nwosu, supra*, 122 Cal.App.4th at p. 1244.)

The District relies on authorities interpreting the doctrine of collateral estoppel or issue preclusion. (See, e.g., *Newport Beach Country Club, Inc. v. Founding Members of*

Newport Beach Country Club (2006) 140 Cal.App.4th 1120, 1132.) Although courts have compared the binding effect of factual findings in a prior phase of trial to collateral estoppel (see, e.g., *Nwosu, supra*, 122 Cal.App.4th at p. 1244), the District has not shown the requirements of collateral estoppel apply here. The District cites only *Hoopes, supra*, 168 Cal.App.4th 146, which quoted a federal appellate opinion as requiring an issue be necessarily decided in the earlier phase of trial to have binding effect. (*Id.* at p. 158, citing *Troy v. Bay State Computer Group, Inc.* (1st Cir. 1998) 141 F.3d 378, 383.) Whatever the rule in federal courts, California courts have not so narrowly interpreted the binding effect of earlier findings. (See *Arntz Contracting, supra*, 47 Cal.App.4th at p. 487.)

The District also argues that the court's causation findings have no bearing on the merit of its legal claims because those claims do not require an analogous showing of causation and because they may give rise to different damages. The particulars of the District's argument are difficult to discern. The District does not identify the elements of its legal claims for trespass, nuisance, and negligence. It does not discuss the trial court's factual findings in any detail or compare those findings to the elements of its claims. Its legal argument on this issue is wholly lacking.

Under these circumstances, we may treat the District's arguments as waived. " 'Appellate briefs must provide argument and legal authority for the positions taken. "When an appellant fails to raise a point, or asserts it but fails to support it with reasoned argument and citations to authority, we treat the point as waived." ' [Citation.] 'We are not bound to develop appellants' arguments for them. [Citation.] The absence of cogent

legal argument or citation to authority allows this court to treat the contention as waived.' " (*Cahill v. San Diego Gas & Electric Co.* (2011) 194 Cal.App.4th 939, 956.)

Even considering the analysis offered by the District, it is unpersuasive. The District asserts that a landowner or possessor has a duty to prevent harm from dangerous artificial conditions on his or her property, regardless of their origin. (See *Sprecher v. Adamson Cos.* (1981) 30 Cal.3d 358, 367-370; *Coates v. Chinn* (1958) 51 Cal.2d 304, 308.) Whatever the merits of the District's assertion, it has no bearing on the issue of causation. The District has not shown that causation is not an element of its legal claims. Similarly, the District claims it would be entitled to damages in the form of diminution in value of the groundwater in the North Basin area. (See *Raven's Cove Townhomes, Inc. v. Knuppe Development Co.* (1981) 114 Cal.App.3d 783, 801-802.) But, again, the District does not explain how this difference in the type of recoverable damages (even if correct) removes the need to prove causation or why its claims should survive notwithstanding the court's extensive factual findings. As the appellant, it was the District's burden to show error. It has not done so.

D. *New Evidence*

The District contends that new evidence, arising after the court's bench trial, required the court to hold a jury trial on its legal claims. The new evidence identified by the District includes new data from Northrop's Y-12 site, the Alcoa site, and the Crucible site that the District believes undermine the court's conclusions regarding those sites. The District also identifies new data from the principle aquifer allegedly showing an increase in PCE contamination in the two years following the court's bench trial.

It is well settled that, in the second phase of a bifurcated trial, the parties may present evidence that was not presented during the first phase. (See, e.g., *Sturges v. Charles L. Harney, Inc.* (1958) 165 Cal.App.2d 306, 324 ["The record of the equitable proceedings indicated that the court patiently heard a great deal of additional testimony."].) But this principle does not compel the trial court to hold an otherwise-unnecessary second phase trial merely because a party contends it can present additional evidence.

The District analogizes the instant situation to collateral estoppel (issue preclusion), which may not be applied in certain situations where new facts have arisen in the time between the first and second actions. "Res judicata or collateral estoppel 'was never intended to operate so as to prevent a re-examination of the same question between the same parties where, in the interval between the first and second actions, the facts have materially changed or new facts have occurred which may have altered the legal rights or relations of the litigants.' " (*Evans v. Celotex Corp.* (1987) 194 Cal.App.3d 741, 748 (*Evans*)). Even assuming that this principle would apply here, the District has not shown a change in circumstances sufficient to justify discarding the factual determinations in the first phase of trial. This exception to collateral estoppel may apply where the legal relationship of the parties has changed or where "new events or conditions which altered the respective rights of the parties or caused a different legal doctrine to be applied" occur. (*Ibid.*) A related exception may apply where a party was deprived of a full and fair opportunity to litigate an issue in the prior proceeding. (*Smith v. ExxonMobil Oil Corp.* (2007) 153 Cal.App.4th 1407, 1417.)

The exception will not apply, however, where the new evidence or changed circumstances merely go to the weight of the evidence bearing on the issue: "An exception to collateral estoppel cannot be grounded on the alleged discovery of more persuasive evidence. Otherwise, there would be no end to litigation." (*Evans, supra*, 194 Cal.App.3d at p. 748.) Based on our review of the new evidence identified by the District, we conclude it does not show a changed legal relationship or other sufficient circumstances to justify an exception to the doctrine of collateral estoppel. It merely goes to the weight of the evidence regarding contamination at defendants' sites and their subsequent remediation efforts. As such, the District has not shown the court erred by refusing to hold a second phase trial on its legal claims based on the discovery of allegedly new evidence.

IV. *Evidentiary Issues*

A. *Evidence Code Section 412*

The District contends the trial court erred by applying Evidence Code section 412 in its statement of decision to justify viewing the District's causation evidence "with distrust" because of certain deficiencies in the District's presentation of evidence. The deficiencies identified by the trial court included (1) the District's failure to conduct a fate and transport analysis of VOC contamination in the North Basin area; (2) the District's failure to update its 2005 and 2008 contaminant plume maps for trial; (3) the District's

failure to calculate the rate of natural attenuation for VOC contamination; and (4) the District's failure to conduct an "adequate cost/benefit analysis for the NBGPP."⁵³

Evidence Code section 412 provides as follows: "If weaker and less satisfactory evidence is offered when it was within the power of the party to produce stronger and more satisfactory evidence, the evidence offered should be viewed with distrust."

"Section 412 only applies when it can be shown that a party is in fact in possession of or has access to better and stronger evidence than was presented." (*People v. Taylor* (1977) 67 Cal.App.3d 403, 412; see *People v. Marshall* (1996) 13 Cal.4th 799, 836, fn. 5.) It does not apply to evidence that does not exist. (See *People v. Von Villas* (1992) 10 Cal.App.4th 201, 249 [statute does not apply to "the failure to create evidence or record evidence in a certain fashion"]; *People v. Coleman* (1972) 28 Cal.App.3d 36, 45 [statute does not apply to prosecution's failure to obtain fingerprint evidence].) We review the question of whether the court properly invoked Evidence Code section 412 for substantial evidence, i.e., whether the evidence viewed in the light most favorable to the court's decision supported the application of the statute.

The paradigmatic example of the application of Evidence Code section 412 is where a party has documentation of an event, but instead offers oral testimony by a potentially biased witness. The witness's testimony may be viewed "with distrust" under

⁵³ The District identifies two additional grounds the trial court purportedly relied upon in its application of Evidence Code section 412: the District's groundwater recharge activities and its reliance on grab samples. Based on our review of the court's statement of decision, we disagree that the court intended its criticism of the District on these two grounds as additional reasons to invoke that statute. We will discuss the District's specific arguments on these two grounds in parts IV.B-C., *post*.

the statute. (*Hardesty v. Sacramento Metropolitan Air Quality Management District* (2011) 202 Cal.App.4th 404, 425; see *Pelayo v. J.J. Lee Management Inc.* (2009) 174 Cal.App.4th 484, 495 [failure to produce summons]; *Vallbona v. Springer* (1996) 43 Cal.App.4th 1525, 1537 [failure to produce documentation of financial liabilities]; *Largey v. Intrastate Radiotelephone, Inc.* (1982) 136 Cal.App.3d 660, 672 [failure to produce corporate records concerning board meetings].)

Here, the question is whether the District's failure to conduct certain analyses, either by its own staff or its expert witnesses, falls within the scope of the statute. We conclude it does not. The trial court did not find that the District failed to produce the results of these analyses; it found that the District did not conduct the analyses at all. The evidence the trial court believed should be produced did not exist. It therefore cannot be the subject of an adverse inference under Evidence Code section 412. (See *People v. Von Villas, supra*, 10 Cal.App.4th at p. 249; *People v. Coleman, supra*, 28 Cal.App.3d at p. 45.)

Defendants point out that the statute references the "*power* of the party to produce stronger and more satisfactory evidence." (Evid. Code, § 412, italics added.) They claim that the District had the power to produce (i.e., create) the analyses at issue. But, as the foregoing cases demonstrate, the statute has not been applied merely where a party has the ability or opportunity to create evidence. The evidence must itself already exist.⁵⁴

⁵⁴ Both the District and defendants contend *People v. Alvarez* (1975) 44 Cal.App.3d 375 (*Alvarez*) supports their interpretation of the statute. In *Alvarez*, the defense attempted to cross-examine an expert witness regarding the prosecution's failure "to

The court therefore erred by invoking Evidence Code section 412 without a showing that the District had evidence in existence that it had not produced.

That said, the trial court was entitled to judge the credibility and weight of the District's causation evidence, separate and apart from Evidence Code section 412. The court could take into account a variety of factors, including whether the evidence was outdated or did not reflect the relevant professional standards of a given scientific field. In its statement of decision, the trial court identified a number of additional reasons it distrusted the District's causation evidence, including the District's failure to provide its expert witnesses with important information, expert witness Waddell's confusing and misleading classification system for VOC groundwater contamination, his use of exhibits

perform tests to eliminate the defendant as the donor of sperm found" on certain evidence. (*Id.* at p. 379.) The trial court sustained a prosecution objection under Evidence Code section 352. (*Id.* at p. 380.) Outside the presence of the jury, the witness testified regarding the possibility of conducting a semen-typing test and the reasons why the prosecution had decided not to do so. (*Ibid.*) The witness acknowledged, however, that he was not an expert on semen-typing. (*Ibid.*) *Alvarez* discussed the issue on appeal as follows: "To summarize: the defense was not trying to show that semen-typing had been undertaken and its results suppressed; nor was there any suggestion that the defense had been prevented from causing its own analysis to be made. The most it could hope to gain from the cross-examination was an instruction based on the principle of section 412 of the Evidence Code In order to apply that rule the jury would have had to find affirmatively that it was within the power of the People to produce stronger evidence than was offered. This finding would have had to be based on the testimony of an expert who evidently had no faith in the result of the analysis he did not make and who, admittedly, had not even read relevant literature on the subject. There can be no quarrel with the trial court's determination that the admission of the evidence that no semen testing was performed would have had little probative value and would have posed the danger of confusing and misleading the jury." (*Id.* at p. 381.) *Alvarez* did not focus on Evidence Code section 412; it based its decision expressly on Evidence Code section 352. Although *Alvarez* considered it unlikely that the defense could properly obtain an instruction under Evidence Code section 412, it is unclear whether *Alvarez* considered the failure to conduct the test or the witness's lack of qualifications dispositive on that issue. *Alvarez* does not provide persuasive support for the position of either side.

based on "inaccurate data," the District's reliance on leading questions during Waddell's direct examination, Waddell's admissions on cross-examination that his testimony was "simply wrong" in certain instances, and his "advocate's demeanor."

The District has the burden of showing prejudice stemming from the trial court's erroneous application of Evidence Code section 412. The District must show there is a reasonable probability, i.e., a reasonable chance, it would have obtained a more favorable result absent the error. (See *College Hospital Inc. v. Superior Court* (1994) 8 Cal.4th 704, 715; see also *Kinsman v. Unocal Corp.* (2005) 37 Cal.4th 659, 682.) The District makes little effort to establish prejudice in its briefing. It states that the trial court's application of the statute "call[s] into question the propriety of all of the trial court's factual findings" and references its prior discussion of causation with respect to each defendant. These conclusory assertions do not establish prejudice. Given the evidence showing a lack of causation, and the trial court's other identified grounds for distrusting the District's causation evidence discussed above, we conclude the District has not shown prejudice based on the court's erroneous application of Evidence Code section 412.⁵⁵

⁵⁵ In urging prejudice, the District offers the following standard based on instructional error: "We review the evidence in the light most favorable to appellant and assume that, had it been properly instructed, the jury might have believed the evidence upon which the rejected instruction was based, drawn inferences favorable to appellant, and rendered a different verdict." (*Douglas v. Fidelity National Insurance Co.* (2014) 229 Cal.App.4th 392, 415-416 (*Douglas*)). This standard applies in narrow cases of instructional error, however, where an instruction was "rejected" that may have provided a legal basis—otherwise omitted from the instructions—on which the jury may have found for the appellant. Because the jury in such a situation was entirely foreclosed from considering that basis, it may be appropriate to view the evidence surrounding the instruction in the light most favorable to the appellant. (*Id.* at p. 415 [considering

B. *Grab Samples*

The District claims the trial court "improperly discounted" the results of the District's grab sample evidence while crediting defendants' similar evidence. The District contends its grab samples were a reliable method of identifying contamination at defendants' sites. (See *United States v. Federal Resources Corp.* (D. Id. 2014) 30 F.Supp.3d 979, 989, 991 [crediting the results of sampling to show site contamination].) The District does not contend the trial court excluded the evidence at issue. The challenge raised by the District therefore goes only to the weight accorded to the District's evidence, not its admissibility. Our standard of review precludes reweighing the evidence on appeal, so the District's challenge must fail.⁵⁶

C. *Groundwater Recharge Activities*

The District argues the trial court improperly used the District's groundwater recharge activities as a reason to "distrust" its causation evidence. In its statement of decision, the court stated, "Moreover, the District's pre-litigation conduct made it more difficult to determine which entities, including non-parties, contributed to groundwater

rejected jury instruction regarding disputed issue of agency, which was an affirmative defense offered by the appellant].) Even if we were to view the court's error here as akin to instructional error, the error did not entirely omit an instruction on a disputed legal issue, so *Douglas* does not apply. (Cf. *Soule v. General Motors, Corp.* (1994) 8 Cal.4th 548, 580-581 & fn. 11.)

⁵⁶ In its briefing, the District cites two documents published by the United States Environmental Protection Agency and available on the Internet. These documents are not part of the record on appeal, and the District's citation to these documents is unaccompanied by any request for judicial notice. (See Cal. Rules of Court, rule 8.252(a).) We will therefore disregard these and similar citations. (See *Tenet Healthsystem Desert, Inc. v. Blue Cross of California* (2016) 245 Cal.App.4th 821, 834.)

contamination or the threat of groundwater contamination. . . . This conduct by the District made it more difficult to determine which entities other than Trial Defendants could or were likely to have contributed to groundwater contamination."

While the court remarked on the difficulties created by the District's recharge activities, the court did not draw an adverse inference based on those activities. The court did not mention recharge activities in its enumerated list of reasons to distrust the District's causation evidence under Evidence Code section 412. Instead, recharge activities were discussed in connection with the court's assessment of the District's causation evidence in general. We therefore disagree with the premise of the District's argument, that the trial court drew an adverse inference based on the District's recharge activities. And, even if the District had established error, it has not shown prejudice for the reasons stated above.

V. *Declaratory Relief*

The District challenges the trial court's declaration that defendants "have no liability to the [District] for damages, response costs, or other costs claimed by the [District], or any future costs." The District argues that its request for declaratory relief was derivative of its other claims, so the court's declaration must be reversed if the District successfully urges reversal of its other claims. We agree. The court's judgment in favor of Northrop on the District's OCWD Act claim must be reversed. (See part II, *ante*.) To that extent, the court's declaration in favor of Northrop must be reversed as well. And, for reasons we have explained, the court's declaration in favor of Northrop as to future costs under the HSAA must be reversed. (See part I.C.5., *ante*.) We therefore

need not address the District's further asserted ground for reversal concerning the its future costs and Northrop.

DISPOSITION

The judgment is reversed in part as to (1) District's cause of action against Northrop under the OCWD Act and (2) the declaration finding no liability in favor of Northrop. On remand, the trial court shall reexamine the relevant evidence in conformity with the views expressed herein, receive such additional evidence as the court deems necessary and appropriate, make new findings of fact and conclusions of law concerning the issues subject to reversal, and enter judgment accordingly. In all other respects, the judgment is affirmed. As between the District and Alcoa, Arnold, CBS, and Crucible, these defendants shall recover their costs on appeal. As between the District and Northrop, the parties shall bear their own costs on appeal.

CERTIFIED FOR PUBLICATION

HALLER, J.

WE CONCUR:

BENKE, Acting P. J.

HUFFMAN, J.